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ABSTRACT

These conferences grew out of the decision of the Guidance Study Committee of the New England Educational Assessment Project that (1) vocational guidance information systems and (2) the emerging role of guidance in the schools would be two themes for worthwhile discussion which could bring together representatives of the educational community-state and local-whose responsibilities directly affect guidance services to students. Among the papers presented under the first topic are (1) "Overview to Use of Computers" by Jesse Richardson, (2) "An Overview of Vocational Guidance Information Systems" by Robert Campbell, (3) "Career Information for Today's Youth" by Glen Pierson, and (4) "Information System for Vocational Decisions" by Allan B. Ellis. Papers presented in the second conference include: (1) "Elementary School Guidance" by George E. Hill, (2) "Relating Guidance Services to Pupil Personnel Services" by Henry Isaksen, (3) "The Elementary School Counselor's Role in the Total Guidance Effort" by Harold Cottingham. (KJ)

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Proceedings of the New England Guidance Conferences

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NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

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PROCEEDINGS OF THE NEW ENGLAND GUIDANCE CONFERENCES

Prepared By

THE NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

A cooperative regional project of the six
New England States funded under Title V, Section 505
of the Elementary and Secondary Education Act of 1965

Providence, Rhode Island

November, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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THE NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

FOREWORD

The New England Educational Assessment Project is a cooperative project of the State Departments of Education of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont funded under Title V, Section 505 of the Elementary and Secondary Education Act of 1965.

The overall purpose of the New England Educational Assessment Project is to strengthen the state departments of education of the region by conducting coordinated projects in the areas of educational evaluation, assessment, data collection and dissemination, and instructional conferences. These projects will provide decision-making resources which will highlight current state and regionally identified educational problems.

The Project is administered by a project director who is appointed by the policy-making Board of Commissioners' Representatives. Day to day operations are conducted by full-time directors stationed in each state department of education in New England. Resource personnel for studies and committees consists of state department professional staff, local school administrators, and leading educators from the academic community.

Philip A. Annas
Project Director

A REVIEW OF GUIDANCE ACTIVITIES OF

NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

Richard Dowd - Guidance Committee Chairman

Historical Precis

A general survey of personnel in the six state departments of education was undertaken in April of 1966 to identify major problems in education. The field of guidance received priority as an area that deserved attention because:

1. The National Defense Education Act Title V-A has been in operation since 1958, yet half of the high schools in New England are without guidance programs.

2. Some school systems in New England have recently begun to implement guidance and pupil personnel programs in an integrated manner for grades K through 12.

3. The data and follow-up reports of Project Talent are significant in planning the future role of guidance in the educational program. We should consider implementation of these findings on the local and state level in New England.

4. The student population increase has stimulated the adoption of more efficient techniques for:
    a. pupil accounting and school administration

b. dispensing occupational and educational information
c. testing and evaluating students achievement.

School administrators and guidance personnel should examine the use of computers hardware in solving some of the problems related to the above topics.

The Guidance Committee of New England Educational Assessment Project, formed October 1, 1966, is composed of state directors of guidance, or their representatives. The Committee outlined the following as a statement and guide for further activity:

> Departments of Education should develop a model against which guidance programs could be evaluated. Such a model in terms of programming could serve as a guide for policy making on the state and local level. A first step, however, would be to establish a description of what currently exists in terms of personnel, programs, and physical facilities in the region. A survey of this type would further give direction to the establishment of goals and would contribute to the development of a model. This first phase of activity is nearing completion.

The Guidance Survey Questionnaire for Secondary Schools

A sub-committee was appointed and charged with the preliminary research and development of a survey form.

In surveying previous research it became apparent that the American Institute for Scientific Study at the University of Pittsburgh had not only thoroughly researched the American high school today, but had also completed an in depth study of guidance programs and personnel. Using the Project Talent tests in the guidance area, the sub-committee obtained permission to adapt the Pittsburg instruments for the New England Study.

The Assessment Project Survey Form which evolved was administered to all secondary school (grades 7-12) guidance personnel in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. Also, a 10 per cent sample survey was made in Connecticut during the 1966-67 school year. The response in those states that distributed the form statewide was above 70 per cent.

Statistical Analysis

The survey results were transposed to magnetic tape by the Measurement Research Corporation of Iowa City, Iowa, under the direction of the consulting firm of Radican Associates of Providence, Rhode Island. Once the material was committed to magnetic tape, the systems consultants wrote computer programs for data analysis which will be the basis of a regional report, and individual state reports.

The Report

The report of this study will also contain profile information on the guidance worker in New England, extracted from the Professional Staff Data Form (1966-67).

The second part of the report will contain descriptive analysis with supporting data of guidance programs and physical facilities in New England's secondary schools.

Phase II and III of the guidance study will examine current objectives and develop instruments to evaluate their success. In the exploratory stage several aspects have been surveyed individually; a student inventory of guidance programs, a review of school populations and their environment, an analysis of school personnel and the community and their perceptions of the guidance function in the school setting.

Important Dimensions of Concern

Throughout the monthly meetings of the Guidance Study Committee, there were certain recurring themes for discussion. These themes, although somewhat related to the guidance survey questionnaire, suggested new areas of concern in guidance practice. These themes-which we are referring to as dimensions-were proposed as areas of study for the Guidance Study Committee, to be developed through working conferences and publications.

An Over View of the Dimensions

1. Vocational Guidance Information System

The use of new educational media in vocational guidance is emerging from "purely" experimental stages. Computerized guidance requires understanding of programmed instructions. As new concepts are developed, a new language emerges. Mastery of both is essential for continued leadership by state directors of guidance.

2. The Emerging Role of Guidance in the Schools

a. Elementary School Guidance

The Guidance Study Committee is in a position to help state directors to initiate, develop or expand elementary school guidance programs through pooling knowledge of current practices and state requirements.

b. Relating Guidance Services to Pupil Personnel Services

The earlier notion of guidance services is slowly being replaced by the broader concept of Pupil Personnel Services. A clearer definition of Pupil Personnel Services and its relationship to guidance services is both timely and essential.

3. Establishing Working Relationship With State Vocational Technical Directors and Staffs

It is being proposed that the Guidance Study Committee establish a liaison with the directors and staff of state vocational-technical programs in New England. These vocational-technical programs are expanding at a rapid rate and are currently involved in research activity which is of immediate importance to the Guidance Study Committee. It is proposed that a series of conferences be arranged to discuss common areas of interest and concern; and to consider the development of joint programs.

4. Establishing Working Relationship With Counselor Educators

A closer working relationship with counselor educators from New England colleges and universities could be established through a series of conferences. Effective guidance programs can be implemented only if the counselors-in-training are being prepared for the types of programs suggested by the Guidance Study Committee.

The Guidance Conferences

The Guidance Study Committee felt that themes 1, 2, and 3 above would provide the basis for worthwhile conferences which could bring together representatives of the educational community-state and local-whose responsibilities directly affect guidance services to students.

This publication presents excerpts from selected papers presented at two conferences:

1. Vocational Guidance Information Systems
   January 22-24, 1968
   Manchester, New Hampshire

2. The Emerging Role of Guidance In The Schools
   March 12, 1968
   Hartford, Connecticut

CONFERENCE I

VOCATIONAL GUIDANCE INFORMATION SYSTEMS

Manchester, New Hampshire

January 22, 23, and 24, 1968

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INTRODUCTION

Richard Dowd, Guidance Committee Chairman

MAN IS LIMITED by his brain and muscle. He cannot work alone with the strength, speed, and accuracy he desires; thus, he has always sought tools, methods, and machines to enable him to accomplish extraordinary tasks. The mechanization of mental work has hardly begun. The extent to which information and control can be mechanized seems limitless.

Over half of the 19,000 schools in the United States housing 9,000,000 students in grades nine to twelve had no full-time-counselors in 1965-66. The average pupil to counselor ratio was about 740 to 1.

As student populations increase, the duties of the school counselor are more demanding. It has become apparent to many educators that data processing could be an invaluable assistance in solving this tremendous burden in guidance and counseling.

Some school districts are using automated data processing for both business operations and pupil personnel data.

As Bushnell pointed out:

"Most of the work involved in the processing of pupil personnel data is clerical in nature and should be performed by non-teaching personnel. In practice, however, much of the work is done by members of the professional school staff. This misuse of counselor time has caused administrators to look with more and more favor upon electronic data processing devices. It has been estimated that upwards of one-fourth of the teachers' and counselor's time is spent in clerical tasks involved in handling educational data."

"The counselor's role will become much more demanding, because the success of the continuous-progress approach is almost completely dependent upon adequate diagnosis of each student's progress in relation to his long term educational and vocational goals. Student assessment must be performed much more frequently than in conventional schools, and the counselor must share much of the load with the teachers."

It has been extremely difficult to carry out any large scale guidance program because of the vast amount of paper work involved. The tremendous increases in student enrollment, an expanding curriculum, the drop-out problem, and the pressures put upon youth to plan their futures, make counseling of individual students of the utmost importance.

To many the question comes to mind: Can I cope with the computer; isn't it a dehumanizing monster that will replace me and make statistics out of school children? The answer is no; David Sarnoff said: "The tide of knowledge is overwhelming the human capacity for dealing with it. So man must turn to a machine if he hopes to contain the tide and channel it to beneficial ends. By transforming the way in which he gathers, stores, retrieves, and uses information, this versatile instrument is helping man to overcome his mental and physical limitations. It is vastly widening his intellectual horizon, enabling him better to comprehend his universe and providing the means to master that portion of it lying within his reach. The outlines of its influence on our culture are beginning to emerge. Far from depersonalizing the individual and dehumanizing his society, the computer promises a degree of personalized service never before available to mankind."

We are barely in the second generation of electronic data processing, and technological innovation does not wait for those who do not comprehend its uses. Rather, it is the obligation of those involved in education to avail themselves of this new tool.

It has now become mandatory for those not familiar with data processing to understand this new field or be left behind. For example, in just ten years the typical electronic data processing machine has become ten times smaller, 100 times faster, and 1,000 times less expensive to operate. This indicates a portend for the future. The computer will continue to grow in usage until it is truly a universal tool.

More precise statistics to show the trend are: In 1956 there were fewer than 1,000 computers in the U. S. In 1966 there were around 30,000 and it is estimated that by 1970 the number will be 1000,000. Ten years ago these computers were capable of 12 billion computations per hour; today, they can do more than 20 trillion, and by 1975 it is estimated they will be able to attain about 400 trillion. Obviously the threshold of the computer age has barely been crossed; but it is being crossed, and those that do not keep up with its advances will find themselves as out of step with progress as the horse in the atomic age.

It should be pointed out, however, that for all its potential to accumulate data and disseminate it, the computer is still a thing. It cannot see, feel, or act unless first programmed to do so. As Sarnoff said: "Its value depends upon man's ability to use it with purpose and intelligence. If his postulates are wrong, the computerized future can only be a massive enlargement of human error." That is why it is vitally important for intelligent people with creativity to become familiar with data processing and the uses of the computer.

Objectives

Secondary schools have required the use of a large volume of pupil data. These data include test scores, school attendance figures, information regarding students' families and homes, health information, sociometric information, marks, grade - point averages, and information in anecdotal records and school histories. Most of this work is clerical in nature and can be handled by nonprofessional personnel. In practice much of the work has been done by members of the professional staffs of the schools.

The general objectives would be to cut down on the clerical time required of guidance personnel in the performance of their functions, provide for better evaluation of individual student abilities and educational goals, provide information for other schools and colleges, and provide counselors with the facts and analyses necessary in their planning and evaluation of present and future programs in curricular development.

Summary

Some of the advantages to be derived from the use of data processing in guidance and counseling are:

1. Speed
2. Accuracy in that most electronic data processing systems include self-checking devices
3. Compactness of stored data in a highly condensed form
4. Reproduction of test scores in a statistical summary, listed, posted on records, reproduced at other points, and collated with supplementary data,

all from a single source

5. Accessibility in that information stored in machine data processing systems, when coded functionally, may be quickly located

MAN - with the assistance of machines - can better serve man.

OVERVIEW TO THE USE OF COMPUTERS

Jesse O. Richardson

Today's educational climate is one of change - change in classroom materials, in teaching methods, in utilization of technology and the media, in preparation of teachers, in the role of the administrator. There are new curricula in use at all grade levels, most of them developed over the past ten years, some still in the process of modification and refinement. The role of the teacher is changing, moving steadily away from the traditional course format of lecture-dominated, lock-step lesson presentation. He is becoming more and more a coordinator and manager of learning resources, who utilizes the best materials and methods available in order to create the most effective learning for each student.

The responsibilities of the school administrator are changing as he is faced with an ever increasing range of educational and social problems in his community and in the nation. He must have readily available to him information resources that will enable him to make the decisions which will lead to effective growth and continuity within his school system.

In order to accomplish this, access to a variety of information sources becomes an important requirement for the educator today and in the years to come. Not too long ago, we were told that knowledge was growing at a rate that doubled

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every ten years. Current estimates shorten that time substantially, and predict a continuing rate of growth. It is clearly evident that an individual in today's society cannot, through his own efforts, benefit from this vast store of information, unless some means be provided to store, process, and retrieve it in a manner suitable to his needs.

This problem is one of the highest concern to the educator, for modern instructional programs must be able to furnish the student with the information appropriate to his learning needs. This means that more and more library, textbook, and resource materials must be provided - and they must be accessible to the user, without delay, at the time that he needs them, and at a location convenient to him. Because of the variety of these resources, and the complexity of the task of processing them, the teacher cannot accomplish this solely through his own individual efforts. In order to adequately fulfill his new role as a coordinator of learning resources, he must seek assistance in the form of teaching aides and modern technological tools. With this support, appropriate curriculum materials can be provided, and instructional techniques adapted to fit the educational requirements of a variety of students.

A device which has these capabilities for support, and which shows great promise for the individualization of instruction, is the electronic computer. It is already involved in our everyday existence to a greater degree than many of us realize. It is a major factor in some of the more significant and permanant changes in our way of life. How the use of the computer is beginning to produce changes in the methods and materials of instruction, and in the administration of our schools, is the subject to be discussed today.

We will look at the ways in which a person - student, teacher, or administrator - can "talk" to a computer in a conversational manner, and we will examine the potential of such computer-mediated discourse for instruction. We will explore the basic concepts of computer assisted instruction (CAI), and the related areas of curriculum design and teacher education that must be considered in the use of this new kind of a teaching tool.

A major component of modern technology, the electronic computer, plays a substantial role in many of these new developments that are taking place. Although it is a relative newcomer, it is involved with our daily existence to a much greater degree than most of us realize. Let's examine some of the ways it is now serving us.

What Computers Are Doing

Your income tax return, along with millions of others, is analyzed by a computer at one of seven regional computer centers. The information contained in it is checked for accuracy, then sent to a national center in West Virginia where it is permanently stored in a magnetic tape memory unit by one of the largest computers in the world. Your complete tax record occupies less than one-quarter of an inch of space on the magnetic tape, yet it can be located and read out in a matter of seconds for processing or updating.

A library of a quarter of a million medical books and thousands of medical journals, located at a national medical center, can be made available through a computer based system to any doctor in the country. A request for information is transmitted to the library's computer system, which processes it, locates the pertinent material, and prepares a detailed bibliography of it. The information is then transmitted directly to the doctor who requested it. The time required to accomplish this - a matter of minutes.

A police officer on patrol spots an automobile which he suspects may be stolen. He transmits the license plate number by radio to a central information bank, where it is checked by computer against a list of stolen vehicles. Moments later a portable teletype printer in his cruiser prints out the identification - if the car is stolen, the police go into action.

An industrial designer sits before a screen which looks much like a television tube. On it he draws a diagram - say, of an automobile body - using a device called a light-pen. A computer responds by creating a visual image of the drawing on the screen. The designer examines the image, and decides to make changes in it. Through commands to the computer, he shortens it, elongates it, modifies it as easily as one stretches a rubber band. He views it from several angles, and finally adjusts it to his satisfaction. The result is an accurate representation, in full perspective, of the finished article as it will look when it is manufactured.

An incoming patient talks to the admissions nurse of a major hospital. The nurse types his personal and medical information on the admissions form, but she uses a teletype-writer instead of a regular typewriter. As she enters each item of information, it is transmitted instantaneously to a large computer system. The computer searches its memory for any previous history on the patient, retrieves his old file and updates it with the new information, and places it in an active status. By the time that the admissions form has been completed, the computer has printed out messages at many locations in the hospital concerning the new patient's needs. It has ordered drugs in the pharmacy, alerted the kitchen to special diet requirements, scheduled the patient for laboratory and x-ray examinations, and notified the floor nurse of the patient's bed assignment. By the time the patient arrives in the ward, his medical history and chart have been printed out and are on file at the nursing station. As any drugs or tests are ordered, or diagnoses made, they are processed through the computer system. Every action affecting the patient becomes a permanent part of his record. Upon his discharge, his record is stored again in the computer's memory as part of the hospital's permanent file.

In another part of the hospital an intern is receiving training in medical diagnosis. Seated at a teletypewriter, he communicates with a computer which prints out for him a medical case history. The computer leads him through the diagnosis step by step, correcting him when he is wrong and explaining his mistakes to him. The interaction between the intern and computer is in the form of a question and answer discourse, which the user sees printed out at the teletypewriter. This printed record is stored in the system for later examination and criticism by his professors.

Fantastic? - it sounds like it! But it actually is happening today. It represents what is called "total information processing", a concept which puts the power of the computer to work in many ways - as a library, as a record file, as an accountant and bookkeeper, as a messenger, as a tutor.

The State of the Art Today

Time does not permit us to describe more than these few examples of the ways in which computers are being used, but the variety of applications is evident. Let's examine their capabilities in more detail and find out what they are, how many are in use, and how fast they can work.

Ten years ago about a thousand computers were in use. Today there are forty thousand, including those used by the military and space programs. It is estimated that one hundred thousand will be in use by 1975. Today's computers are ten times smaller, one hundred times less expensive, and one thousand times faster than those of ten years ago. They can perform millions of calculations in thousandths of seconds, and rarely, if ever, make a mistake. In 1960 there were about 300 applications for computers - today there are more than 1000. The eventual number of applications depends entirely on our ingenuity in developing them, for a computer can do nothing unless a person has previously told it precisely what to do and how to do it. This process is called programming, and it requires the special skills of a person who has knowledge of both the internal workings of the computer itself, and the tasks which it is to perform for the user.

It would be fascinating to explore all of the ways that computers are working at hundreds of tasks, ranging from routine computation to simulation of intelligence and thought processes. But our specific concern is for what the computer can do as a tool for education - for the student, the teacher, and the administrator.

Direct applications to improvement of instruction and to administration were very limited as short a time as five years ago, but utilization of computers in the schools is beginning to grow rapidly. High costs of equipment made it difficult for school systems to make use of the computers of a decade ago.

Also, those earlier computer systems were not designed for easy adaptation to educational applications. Today, the costs to the user have dropped substantially, and new kinds of equipment have been designed for specific instructional and administrative applications.

There is other financial support available to the schools that we can look to for assistance. Thirty years ago the need for research in teaching and learning was unrecognized - funding support was non-existent. In contrast, today,millions of dollars in grant support from federal, foundation, and university sources is being poured into research and development programs in mathematics, science, literature, languages, and the social sciences. The Bureau of Research of the U. S. Office of Education provides 100 million dollars a year for research and development programs, a large share of the funds going to the development of new applications of technology to serve the needs of education.

These programs can be grouped into six general categories

1. Computer assisted instruction - the use of a computer system for classroom instruction and the development of the instructional materials required for CAI.

2. Data analysis and translation - the analysis of essays and dissertations, translations of printed materials into Braille, analysis of work structure and speech.

3. Simulation and model building - the testing of theories in simulated situations, trial decision making based on projected administrative situations.

4. Local and regional data banks - the use of a computer for storage, processing and retrieval of large bodies of information concerning educational programs and related activities.

5. Educational administration - the broad application of computers to such areas as class scheduling, fiscal and pupil accounting, teacher certification and placement, school planning and management.

6. Training in computer technology - the establishment of training programs for teachers and administrators to acquaint them with computer technology, and assist in the development of applications in education.

As we examine these areas further, it will become obvious that each one relates closely to one or more of the others. In fact, much of the current effort in the application of computers to education includes activity in several of the areas. The last one, training in computer technology, is significantly important to each of the others, for it is here that a continual effort is needed to provide trained personnel to assist the local schools in the application of computer technology to their educational programs.

It is estimated that more than one-half of our college graduates will have to go into teaching by 1970 in order to maintain a pupil-teacher ratio of 30 in the nation's classrooms. It is very evident that the supply of teachers will fall far short of meeting this demand. Our only answer is to employ technological aids on a broad scale to provide assistance to the teacher. This will both increase his effectiveness and enable a much larger number of students to benefit from his skills. At the same time, we must continue to move towards our ultimate goal, that of individualization of instruction.

The computer seems to be a device which possesses the means of reaching both of these goals - teaching larger and larger numbers of students, and adapting the instructional program to meet individual needs. It can do this through its capability for storage, retrieval, and processing of information. It can assist the teacher to recognize the variables in student ability and rate of progress, and modify the curriculum material to fit individual needs.

The problem that exists is how to supply the computer with the required materials of instruction for use by the student, and to provide it with the programs which cause it to work as an effective aid for the educator.

Computers In School Administration

Ever since computers were first used in business and scientific applications, educators have been interested in the ways in which the techniques of electronic data processing could be put to work for the public school administrator. It was evident that the business community had found that the computer could do payrolls, and cost accounting, keep inventories of materials and products, maintain detailed day-by-day records of production, control manufacturing processes, and many related tasks. However, the use of computers by school administrators was, at first, relatively limited. Records show that as short a time ago as 1961, less than five percent of the nation's twenty thousand school districts were making use of electronic data processing equipment. One of the major reasons for this was that those early systems were not easily adaptable to the kind of information processing required by education. The software was designed to handle large volumes of repetitive data analysis by batch processing techniques, or to carry out the lengthy computations or data reduction required in scientific investigations.

There are many clerical and bookkeeping tasks that can be handled easily by a business-oriented data processing system, freeing the administrative staff from piles of paperwork and speeding up internal channels of communication. Many school systems are using data processing equipment or services for these purposes. We will not discuss this kind of service today for our purpose is to identify how computers can contribute to school administration in ways other than the routine use of EDP. One such application, the scheduling of pupils in accordance with the requirements of their courses of study and the availability of classroom space and related facilities, is typical of the way in which high speed processing of information has simplified a major administrative task.

The building of a master class schedule by hand is a tedious process involving many people. With the use of a computer, the scheduling can be done during spring or summer vacation periods without the necessity of involving large members of teachers and counselors in the gigantic chore of manipulating pupils, places, and programs.

Grade Reporting

The reporting of student grades by computer-based techniques has as a visible result the printing of report cards indicating achievement and academic standing at the end of a marking period, and, at the end of the school year, results of final examinations and a final grade for the courses. The information which has been supplied to the computer usually contains the student's name; name and address of parent, student identification number; year of graduation; previous credits; name and number of course, teacher, grade, and teacher comments; attendance information including days absent, times tardy or dismissed. The data comes from several sources in the school, but is merged in the computer under program control to create a single master file of student records. Each time during the school year that new report cards are issued, the file is updated with new information where changes have occurred in the previous data.

There are many ways in which this information can be of further use. By selective processing, the computer can determine student averages and distribution of grades for individual subject areas or for the entire student body. Under-achievers can be identified and counselors alerted to investigate whatever problems may exist. By examining the accumulated records of several years, course selection patterns can be identified for examination by curriculum study committees. Information on drop-outs can be assembled to guide in the establishment of special programs or course offerings designed to reduce the incidence of this problem in the school.

Data Bank

Today it is possible to provide this information - rapidly, accurately, and effectively - by making use of computer-based techniques. If the data concerning the instructional program are combined with that concerning the school plant, school staff, and school services, a data bank is created. It is the establishment and use of such a bank of information that we will consider as an aid to administrative problem solving.

The concept of a data bank is contained within that of a large-scale information system, serving a number of schools or school systems by providing the data needed for decision-making with a minimum of delay. Such a system could serve a county, a state, or a multi-state region of the country. Regardless of the number of participants served, the system itself has certain basic characteristics. It would contain information on professional staff including name, address, social security number, and other indicative data. Degree status, subjects taught or grade assignment, certification status, salary, and similar data would be stored in the system for all professional and non-professional personnel. Data on school facilities, supplies, equipment and fiscal operations would be included in the system, as well as pupil information of the type described earlier.

Summary

There are several final points that should be made. The technical problems of establishing data banks and information systems are easily within the state of the art today, but the requirements for equipment and personnel are substantial. A school district or group of districts contemplating this kind of a program must make sure that adequate funding and operational support is available for a long-range effort. The development of a data bank extends over a period of several years; in fact, it grows continuously as new information is added to it, and becomes more valuable as a result of its growth.

We have looked at some of the ways in which computers are being used for CAI, and in the development of data banks and the establishment of broadly-based information processing systems. But there are implications for the educator that extend considerably beyond these applications. During the past decade we have seen that computers have become powerful tools for science and engineering, in business, industry, and management. As this technology is used in education, what does this mean for the schools? How will the classroom teacher, the guidance counselor, the school principal, the superintendent of schools be involved; how will their roles be affected?

It is the responsibility of the schools to prepare students for effective participation in the technological world of today and the years to come - in what will most certainly be a computer-assisted society. We can help to accomplish this by bringing them into contact with this new technology as part of their everyday school experience. A universal result of the developmental programs in CAI is that students develop very rapidly an easy familiarity with the computer system with which they are working. The system becomes as much a part of their classroom experience as using a textbook, reference materials, library facilities, and doing assigned homework.

> Our responsibility as educators is to prepare school children to live in a world which is theirs, not the one that we are so familiar with. We must employ as much as possible the tools with which they will have to work in the years to come. Through the use of a computer technology, we can now see the ways in which we can provide for and insure the continued achievement of quality in the instructional programs of the nation's schools.

AN OVERVIEW OF VOCATIONAL GUIDANCE INFORMATION SYSTEMS

Dr. Robert E. Campbell

The duties of school counselors have become increasingly more demanding. In a recent survey of guidance conducted by our Center, it was learned that counselors would prefer to spend much more time in vis-a-vis counseling with students, but are restricted by a myriad of routine "busy work" tasks. For example, counselors estimated that on the average only 31 per cent or less of the students had two or more conferences of at least 15 minutes over the past year; the average length of time per conference was 16 minutes. Counselors also reported that although they devoted the largest block of their total time to individual counseling: (40 per cent or less), they also estimated that they spend 21 per cent of their total time in routine tasks. In 1961, Bushnell suggested that "this misuse of counselor time has caused administrators to look with more and more favor upon electronic data processing devices." Pierce (1967), Hunter (1966), and others have outlined a lengthy list of possible pupil personnel uses of data processing techniques and computer technology as a tool to assist counselors and educators in the administration of educational programs. These include for example, test scoring, pupil accounting, attendance keeping, and analysis, student census, class rosters, student scheduling, academic simulation, class book distributions, grade reporting, educational progress monitoring to identify and project student educational crises, cumulative records, storage and retrieval of occupational and educational information, computer-assisted counseling, and vocational-educational decision making. Grossman, chief of the Bureau of Systems and Data Processing for the California State Department of Education in his foreword to Pierce's handbook, stated that the guidance counselor has been given the key to a new kingdom (in the form of data processing) and it is hoped that he will use it wisely.

The fantasies are now becoming realities. Approximately three years ago several investigators began experimenting independently with computer-assisted counseling. To the best of my knowledge, the first attempt was that of Cogswell for Systems Development Corporation in Santa Monica, California. Cogswell reported that Kleinmuntz's work on the interpretation of the MMPI using the digital computer stimulated his computer-assisted counseling research. He initially referred to the project on "The Design of Man-Machine Systems in Education" which was later changed to "Explorations in Computer-Assisted Counseling." In the spring of 1965, researchers concerned with this problem asked our Center to sponsor a research exchange conference on "Systems Under Development for Vocational Guidance," which was held in August of 1966, and was attended by approximately twenty researchers. The meeting was successful and the conferees agreed to meet every 6 to 8 months to continue to share mutual problems and ideas. The second meeting was held at Systems Development Corporation in late February of 1967, the third in September, 1967 at IBM Corporation in Yorktown Heights, New York, and the fourth is scheduled for the spring of 1968 in Palo Alto and will be hosted by The American Institutes for Research. Although, for discussion purposes, I have categorized three major research thrusts, they are not mutually exclusive and ultimately tend to complement each other. I think this will become apparent as I describe each research category and provide a few illustrative projects as follows:

1. Vocational-education motivational techniques: research efforts in this category represent new techniques not necessarily involving computers and are aimed at producing "ego-involvement" in occupational information and exploring career patterns, *i.e.* motivating the student to explore occupations and career patterns and the appropriate educational routes to accomplish various occupational goals. There are several experimental efforts under development to illustrate this category, for example, Sarane Boocock at Johns Hopkins University and Barbara Varenhorst from the Palo Alto Unified School District have developed career games. The gaming technique is a simulated experience and is designed to give students practice in making the kinds of decisions about education, job, family life, and the use of leisure time which they will actually have to make in their own future lives. (Boocock, 1967; and Varenhorst, 1967). A somewhat different but categorically similar approach is being developed by Krumboltz at Stanford. He has been experimenting with vocational problem-solving experiences for stimulating career exploration and interest.

> A vocational problem solving kit represents a "work sample" of a particular occupation in miniature containing simulated occupational experiences.

For example, if a student were interested in accounting as a career, he would be given an accounting problem solving kit which would require him to perform sample accounting tasks providing a "taste" of the occupation. If occupational arousal or interest is still active after the problem solving experience, arrangements are made for the students to seek additional occupational information and experience, e.g., the student might take an accounting course or visit an accountant on the job. Krumboltz envisions a variety of problem solving kits representing a range of occupations as well as a series of related experiments to test and alter the basic theme.

2. Vocational and Educational media techniques: this category of research is concerned with designing and testing new procedures and media for conveying vocational and educational information to the consumer. The projects which fall under this topic are experimenting with modern audio-visual and automated technologies to stream-line the processing of vocational and educational information. Examples of these are the multimedia project for communicating occupational information to non-college bound youth under the direction of Ann Martin at the University of Pittsburgh (Campbell, Tiedeman, and Martin, 1966); the San Diego Regional Career Information Center directed by Pierson, Hoover and Whitfield (1967), several experimental efforts by Magoon at the University of Maryland involving audio-visuals, tape recorders, and variations of his famous "Juke Box" technique; and finally the pilot models to computerize employment data funded by the U. S. Department of Labor under contract with the Auerbach Corporation (Behavioral Science Newsletter for Research Planning, 1967). These models will be designed

to develop automatic data processing systems which could quickly match people with jobs and training opportunities. The model data systems will be set up and tested in Florida, Utah, Michigan, and the New York City metropolitan area.

3. Computer-assisted counseling and vocational decision making systems: this category probably represents the most complex research endeavors in that the project investigators are concerned with developing vocational and/or educational computerized decision making systems which encompass a comprehensive range of behavioral activities; not only do they include the communication of vocational and educational information, but also contain numerous computer sub-routines built-in to the system to allow frequent student-system interface through various exploratory decision making or information seeking modes. Probably the best known examples of this category of research are Cogswell's "Computer-Assisted Counseling" project at Santa Monica, California; Harvard's "Information System for Vocational Decisions" developed by Tiedeman et al; IBM's "Guidance Counseling Support System" under the direction of Minor, Super, and Myers at Yorktown Heights, New York; "Project Plan" developed by Flanagan at the American Institutes for Research in Palo Alto, California; the Pennsylvania State University "Computer-Assisted Vocational Guidance Program" for ninth grade boys under investigation by Impellitteri et al; and Oklahoma State University's "Computer-Assisted Counseling" project conducted by Roberts and Frederick.

Although the systems are basically similar in terms of fundamental components, they vary considerably in complexity. Each of them has a conceptual system, input-output sub-systems, storage and retrieval hardware, visual displays, and monitoring provisions. They differ primarily in their ultimate goals, number of sub-systems involved, hardware and software designs, potential capacity, and general magnitude. For example, the Oklahoma State University project describes a network of sub-systems which will provide the client with ten exploratory modes, each involving a different but related client decision, based upon the IBM system/350 model 50 Computer Systems, e.g., academic courses of study, vocational courses of study, extra-curricular activities, and military obligation. . . .

I would like to devote the time remaining to a critique of research on guidance systems. I will try to accomplish two things; (1) a synopsis of systems design and implementation problems, and (2) speculate about future implications of system developments. . . .

1. The system model: in establishing an experimental system, one of the first problems (other than acquiring funds), is to theoretically conceptualize and operationally construct a basic model of guidance operations to be performed by the system. At the onset the investigator is plagued with a number of theoretical decisions, such as speculating on the process of vocational choice, the degree of self-direction given to the student, the student's data tolerance (absorption rate) per time interval, individual learning differences, vocational readiness, and the role of periodic "vocational-educational diagnostic evaluations".

Another major question has to do with selecting an operational system model, i.e., should the model merely attempt to reproduce current guidance programs as they presently exist, or should the model be constructed or evolved from a theory of "what ought to be". Still another question, is the system overemphasizing the rational side of man and minimizing the importance of his affective nature in vocational behavior?

2. Data base construction and data input: what kinds of information will a system need in order to accomplish its goals? Although the input data will vary as a function of the goals and complexities of the system, typically occupational information, educational information, demographic data, test results, school characteristics, and academic records of the student are included. Most systems also allow for student input, i.e., the storage of personal data which are directly supplied by the student as he interacts with the system. In addition to selecting the general major categories of the data input, the investigator has a number of decisions to make in regard to organization of the data, the quantity of data, mode of presentation, etc. For example, in providing information about vocational training opportunities, how should these be grouped, how much detail should be included, and at what points within a system's sequence should the material be introduced? What data bases should be provided besides the educational data base? Occupational? Military? Family and marital? Leisure? How can one provide access linkage so that movement from base to base is possible? How can one monitor access

and interpretation so that a history of use is provided and sense of increased complexity in thought and action plan ensues in conjunction with use? How can one simulate a "career" so that a sense of progress and of operation for progress can be provided for the user?

The inclusion of test results as an imput represents still another set of problems for systems researchers - not only are there problems of quantity and quality, but also procedural problems of test interpretation and test administration. For example, what kinds of information should be obtained through tests and which tests are the most appropriate to measure the selected behavioral traits? Should the system be designed to do the actual testing or should the testing be done independently of the system? Similar questions are asked in regard to test interpretation. Can systems be designed with enough flexibility to handle the complexities of test interpretation, not only for singular tests but for batteries? The researcher has a number of alternatives for handling test data and he will probably experiment with different approaches while attending to "feed-back" from the client. Another problem is how to classify and present educational and occupational information, e.g., training and school admission requirements, and job opportunities. One of the major advantages to the student using a computer system to assist with occupational choice is that the system, if properly programmed, can provide a wide spectrum of occupational exploration. It can help the student move from one occupation to another within a family of occupations, across levels of occupations, and through career progressions. To provide this exploration, a complex well-organized occupational classification system is needed - one in which the student can explore on the basis of one or more occupational attributes (skill requirements, income, etc.).

After a taxonomy of occupations has been developed, there are further hardware questions such as selecting optimum media for presenting occupational information. A sophisticated system might utilize film strips, audio tapes, slides, and other innovative techniques. A system must also include points at which the student can interrupt his interface with the computer temporarily and use other modes of obtaining occupational information, as group counseling, work experience, and on-the-job visits.

Somewhat different from classifying occupations, but related is the concern for a more comprehensive analysis of the world of work. Two major questions emerge: (1) How should the world of work be described and presented? (2) How much information does the student need about the world of work to make sound vocational choices?

An effective analysis draws upon a vast range of interdisciplinary data, as sociological correlates, labor economics, career progressions, and style of life. Analysis requires movement toward integration of research from the fields of economics, psychology, sociology, education, and anthropology. This kind of data could provide a more personal analysis for the individual as he attempts to relate himself to the world of work. The system could conceivably pose thought-provoking, longitudinal career questions of the occupational neophyte. It could also allow the student to look more carefully at the series of choice points involved in the world of work as opposed to a singular occupational choice. The student might also have an opportunity to test his knowledge and perceptions of the world of work as contrasted with the actual reality of work.

3. Computer technologies development: implementing an effective vocational guidance system requires elaborate "software" and "hardware". As the system is developed experimentally and tested for its effectiveness, modifications of standard equipment and the design of new equipment becomes mandatory. Due to the rapid advances in computer technology, it is a major task for the individual researcher to stay abreast of developments. Establishment of a national hardware exchange service or a systems design bank has been suggested. New hardware could be registered and made available through this service; proprietary restrictions could be imposed as needed. Large scale operation on the order of a research exchange bank will undoubtedly be needed in order to make wide spread use of computer-based guidance systems.

4. The monitoring role: as the student interacts with a system, there are numerous occasions for intervention (monitoring) by the counselor, teacher, and other relevant persons. There is no set rule as to when monitoring should occur. Monitoring will vary with the individual system programming scheme. Most systems incorporate intervention points frequently so that the monitor or the student can "go off" the system as the need arises. Typically this will occur when problems become highly personal, when "hangups" occur, where referral to other resources is needed and/or where the student appears not to be ready to continue interacting with the system. When the student transfers from the computer to the counselor, the counselor can have benefit of the student's previous interactional record.

   Monitoring should again remind us that a system is a tool under the control of both the counselor and the student. However, in developing a system, clarification will certainly be needed as to the frequency, the amount, and the kind of monitoring.

5. Subject and settings: although it is generally assumed that systems are being developed for persons in need of vocational guidance, considerable variation exists within this population, e.g., age, educational level, and vocational readiness. A senior in college may want different kinds of information than a junior high school student contemplating a vocational education program. There are also variations in the vocational guidance setting e.g., Youth Opportunity Center, college, or United States Employment Service. Differences in subjects and settings greatly influence the

input and programming sequence. Although the basic model could be essentially the same, changes would have to be made to account for the specific populations. Most researchers envision flexibility in their models so that the basic model can be easily altered to adapt to other subjects and settings.

6. System inplementation and adoption: another major problem is getting the professional community to accept and use computer systems.

   I have had a number of occasions to ask school counselors and graduate students in counseling for their opinion. I am somewhat disappointed to report that their typical reaction is one of resistance and negativism. Upon further inquiry I find that their reaction is due to a misconception and when they see it as a tool or support guidance system the resistance dissolves.

   In view of this I believe we need to be careful of our public image. I would firmly recommend that we see to it that there are institutes, workshops and conferences, not just to clarify the meaning of computerized guidance services, but to begin to train our professional community on how to use these innovations effectively.

7. Cost analysis: the cost of developing a vocational guidance information system is expensive but I would guess that the magnitude of the dollar figure is deceiving when one considers the potential savings in manpower and informational services. We

should not forget that it is very likely that initial hardware and staff costs are at their maximum during the pilot state, and later taper off. I have heard conflicting cost figures and since they are conflicting, I hesitate to mislead you since many of these are probably rough guesses. However, Pierce cites what appears to be a rough but realistic budget guideline as follows:

> Canning, Sisson and Associates (3) pointed out that data processing costs can be divided into two phases: the initial expenses incurred in order to get into operation, and the day to day operating costs. The initial expenses included the systems design costs which ranged from $20,000 to $300,000; the programming costs which ranged from $75,000 to $1,000,000; the physical installation costs which ranged from $40,000 to $400,000; and conversion costs in implementing the new system which ranged from $30,000 to $500,000.
>
> At present the expenditure for guidance services in California in 151 districts with approved National Defense Education Act Title V-A programs averaged $32.90 per secondary pupil. Salaries of counselors amounted to $27.43 per secondary pupil and salaries of guidance clerks $3.93 per secondary pupil. Guidance and clerical salaries accounted for 95 percent of the total cost. In secondary schools with enrollments of 100-299, the cost per pupil was $37.58, and in schools with enrollments of

10,000 and over, the expenditure per pupil was $33.35 (20).

Information regarding the costs of processing pupil personnel data in districts using manual methods was generally inadequate because the largest cost, that of professional staff time, was concealed. A California study (24) indicated that in districts with data processing installations counselors spent 29 percent of their time on clerical duties; in districts using manual methods they spent 39 percent. No attempt was made to determine the amount of time spent by teachers and administrators on clerical tasks involved in handling pupil personnel data.

It was difficult to prove that costs were reduced at first by the introduction of data processing systems because schools apparently had a reservoir of available help from professional staff members and students who assisted with clerical tasks. The real economy was found in the saving of valuable professional time, energy, and skill as well as in the improvement of the speed and quality of the data processing itself. The meaningful argument was one of human economy: providing for the more professional use of time of staff, for better guidance and instruction, and for the realization of higher education goals (11).

New York

Behnk gave the following figures for a New York State processing center in 1964:

For enrollment over 12,000	
Average machine rental	$17,630.00
Average per pupil cost of machine rental	.89
Average miscellaneous expenses	23,284.00
Average cost per pupil of miscellaneous expenses	1.33
Total expendit	43,924.00
Average per pupil cost for total expendit	2.22
Average equipment cost for data processing	2,999.00
Personnel costs for enrollment over 12,000	
Data processing manager	$ 7,257.00
Machine operator	4,227.00
Key punch operator	3,485.00
Machine and keypunch operator	4,400.00
Average total personnel costs	21,150.00
Average number of data machines	9,000.00
Average number of data applications done	11,000.00

On the basis of the experience gained by the California State Pilot Project, it was estimated that data processing for a school population of 35,000 would cost about $2.28 per year per student for pupil personnel services. An average cost of about $3.00 per pupil was found when a center was processing both student and financial records for member schools (4).

The California Pilot Project (24) estimated an entire system could be processed for a per pupil cost of approximately $3.00 assuming a regional center serviced a minimum of 100,000 students and a maximum of 300,000 (25). Bushnell and Cogswell (23) found that the annual cost of data processing functions of a school in Southern California was approximately $21,000 which included a data processing supervisor, two machine operators, a key punch operator, a 407 accounting machine, a 519 reproducer, an C85 collator, a 557 interpreter, an 083 sorter, a 523 summary punch, an 056 punch, an 026 verifier, and an 850 IBM test scoring machine (23).

It is obvious that savings accrue from a variety of sources including financial. The most important savings is in the area of providing a means for professional people to utilize their time on professional duties. The regional concept in data processing is rapidly gaining support throughout the country.

The counselor and administrator must be aware of the cost of data processing. Machinery costs money, forms and cards and staff cost money. Data processing salaries are, in fact, embarrassingly high when compared with teacher salaries. There is evidence that too low an investment in data processing does not pay off. A study conducted by a management consulting organization surveyed twenty-seven companies with extensive computer experience and found that nine companies had achieved only "average" results and were still a long way from economical computer system operation. The "above average" companies spent more on their computer systems. One obvious answer is for school districts to pool resources with a regional center on a shared time basis.

8. Research study: continued research is needed to provide data for implementation and continued refinement of a system. Longitudinal and cross sectional studies on occupations, the decision making process, the process of learning, career behavior, psychometrics, and counselor behavior, are critical in providing data bases for refining systems. This is a two-way street in which research findings can be tested by the system and the system in turn can identify researchable gaps and problems.

I would like to conclude by sharing some personal views about the future impact of vocational guidance systems. First I will list briefly some extrapolations based upon current system trends and developments. Secondly, I will raise some questions about vocational behavioral goals, and finally say a word about the research potential generated from systems approaches.

1. Extrapolations and speculations: with current technical ingenuity and rapid technological advances, one gets the feeling that almost anything is possible. For example, the commission on the year 2000 predict metered computer time available in home or office, and high-capacity, inexpensive worldwide

communication by laser, satellites and light pipes. Individual desk-type computers with visuals are currently in use experimentally. It seems that the vocational guidance systems designer has to project fairly far in the future or run the risk of having an obsolete system before it gets off the drawing board.

Now for a few speculations:

(a) Home telephone access to computerized vocational-educational information. By this I mean that an interested person in need of vocational information can direct dial from his home to a central computerized storage and retrieval system which not only can provide over-the-phone answers to the caller, but can later provide a mailed transcript recording of the dialogue.

(b) World-wide vocational guidance information system via satellite. This is not too far away--we have the operational potential currently available i.e., technology, international professional organizations, and an international occupational classification system--all that is needed is someone to take charge and the sparkplug to ignite it. Perhaps the sparkplug is closer than we think; the international trading of human talent is becoming increasingly popular--sort of a worldwide placement service. The need for this should increase as intercontinental travel advances and people take weekend sabbaticals to many distant points.

(c) Vocational-education information live by closed circuit TV and instant video replay. With modern audio-visual technology, why do we have to rely on the traditional occupational literature--it is very conceivable that we could capture on video tape or close-circuit TV realistic live "work samples" of various occupations which would be more up-to-date and less superficial than our present information.

2. Behavioral goals and outcomes: My major concern at this point is to raise behavioral questions which might represent an outgrowth of our experimentation with vocational guidance systems. I believe that there is a danger of becoming overly enchanted with technological innovations at the cost of losing sight of the bigger picture. Therefore, we ought to step back frequently and ask ourselves such questions as where are we going? What are our ultimate criteria? Are we thinking of specific behavioral outcomes or are we proceding in bits and pieces? Should our long range behavioral outcomes be focused just on the problems of vocational choice and career patterns or is a larger, more comprehensive problem at stake in vocational guidance? I am convinced that we should be giving thought to something more comprehensive than just choice and career patterns. I would propose to concentrate on what I prefer to call "vocational behavior theory" which would include not just choice and career behavior, but the more critical problems of job satisfaction and job

adjustment. In the long run, we could offer a more complete and comprehensive service by viewing vocational behavioral problems in total context. Fulfilling this task would necessitate an interdisciplinary approach and a disruption of traditionalism.

Another possible outgrowth of the use of vocational guidance systems is what I will call rejections of simulated career trajectories. Assuming that systems become increasingly more sophisticated in their design and service, the client will have the opportunity to examine fairly realistic career trajectories by computer simulation. This opportunity might result in the client's more frequent pondering of the consequences of a given career choice if he is permitted the benefit of long range analysis. Wilensky points out that studies of career patterns show considerable "moving about" or shifting between field, *e.g.*, the undergraduate in business administration moves to law school, the education major takes graduate work in the humanities while graduates in many fields move to schools of education. Project talent data show that about three in four of all boys graduating from high school change their original career goals one year after graduation. This could mean that there will be more career choice shifting as the student benefits from computer career trajectory simulation and even to the point that many of society's most preferred careers, may be rejected as the student inspects the career-style of life. Of course by the same token other traditionally less preferred careers may be pursued. We are beginning to see some of this in the "organization man" careers. It is reported that there is a new breed of business graduates emerging who are rejecting the modern executive syndrome and related style of life characterized by minimal time for the family, ulcers, long hours, and organizational values in exchange for less demanding, but more personally satisfying career patterns and styles of life.

Another question--will more sophisticated vocational guidance by means of computers bring about changes in vocational development theory? Will it be possible to eliminate such events as the fantasy choice stage or will students in this stage have the benefit of manipulating the system to indulge in more complex fantasies? Will the theory of vocational developmental states be expedited or altered as computer programs are adapted to extend into the elementary years?

Or can we envision computers playing the role of career "hatchet men" by telling an unsuspecting client that "although you have most of the attributes to be successful in career X, your personality orientation is not congruent with the psychological work climate of this career hence further pursuance of this career could result in psychosomatic consequences manifested by insomnia, hypertension, and generalized frustration".

3 Research Implications: It is obvious that a great deal of both "software" and "hardware" research will be generated by our investigations of computerized vocational guidance. Many of the questions which I have raised are speculations and untested hypotheses which could be explored. We still need a great deal of research on the general areas of vocational development and choice theory, the socio-psychological correlates of work, viable occupational classification systems, the impact of computer systems on the sociental structure and many others.

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A REGIONAL CAREER INFORMATION CENTER: DEVELOPMENT AND PROCESS

Dr. Glen N. Pierson

Rationale

In November 1967, an event that attracted the attention of this nation occurred in the building housing the Commerce Department in Washington, D.C. There is a mechanical device in the lobby of this building which records the current population of the United States. The dial on this device recorded a total population count for this country of two hundred million people in November 1967. Another individual is added to this count every ten seconds. During the time required for the reading of this paper, a number in excess of one hundred will be added to the population of the United States.

This rapid growth in our population and the resultant societal and technological changes create problems for people. Never in the history of our country has the occupational structure been changing at a more rapid rate. During the decade of the 1960's, twenty-six million youth will leave our secondary schools. (6) The types of occupations these youths can expect to find available will increasingly be ones calling for possession of specific job skills.

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A substantial majority of the occupations will demand some type of post-high school preparation prior to labor market entry. (3) (4) The necessity for considering both vocational choice and type of preparation will be apparent to a large majority of these youth. The need for an adequate vocational guidance program with appropriate occupational information materials in the secondary school is obvious. However, few school systems have succeeded in providing appropriate occupational information materials in a form helpful to students.

Obstacles arise from both the nature of the material available from conventional sources and the means provided for student utilization. Materials that are currently available come from diverse sources, have varying formats, and usually lack specificity to a local situation. In most cases this occupational literature is out of date, since the time of the collection of the information to its actual publication is at least a year or more. Some of the materials have been prepared with an eye toward recruitment and cannot always be relied upon for the objectivity desirable when students must make choices based on factual information.

As a result of difficulties in filing and retrieving career information, educators as well as students are often frustrated in their attempt to utilize even those materials which are available. Although various procedures have been developed seeking to overcome these difficulties, the results of a questionnaire administered by the Department of Education, San Diego County, indicated that a majority of the students responding made limited use of the information contained in typical occupational files. (2) Clearly, a need existed for current and accurate information that would overcome many of the difficulties inherent in the usual occupational files and that would provide up-to-date general and local job information for students.

History of Center Development

These difficulties were recognized in San Diego County by the Coordinating Council for Vocational Education as it discussed the difficulties local schools encountered in their attempts to provide current and accurate career information on occupations not requiring a baccalaureate degree. The Council -- made up of representatives from the unified and high school districts, junior colleges, San Diego State College, the California State Department of Employment, and the Department of Education, San Diego County -- agreed that: (1) many school counselors were not able to keep abreast of current occupational information; and (2) much of the occupational literature being used in the schools did not communicate to the students.

In response to Council recommendations, the Department of Education, San Diego County, submitted a proposal to establish a Regional Career Information Center to serve high schools and junior colleges in the area. Partial funding was provided by the California State Department of Education under the provisions of the Vocational Education Act of 1963 (P. L. 88-210). Stage One (February through June 1965) began with the needs study to determine the type of career information desired by students and counselors. Extensive use was made of student reactor panels, advisory committees, questionnaires, and outside consultants.

At the conclusion of the needs assessment, the project concentrated on designing procedures to collect, abstract, synthesize, produce, store, and disseminate career information that was specific to those criteria which the consumer -- students and counselors -- had established.

A model system was developed which, it was hoped, would overcome some of the traditional criticisms of occupational literature. These specific criticisms upon which we focused were: lack of authenticity and realism; information that was not current and specific to the local labor market; and the difficulty in filing and retrieving the data. The objectives of this model system supported the conclusion of the Committee on the World of Work in the Detroit Public Schools which issued the following summary regarding the type of occupational information needed by counselor and student: (1)

> To be effective in any guidance program which prepares students for the world of work, counselors should have the latest information about (a) the social and economic trends of the job market, and its opportunities and changes, (b) occupations in which there is greatest demand, (c) opportunity for advancement, (d) employment security, (e) fields in which there are shortages of available workers, and (f) fields in which there are shortages of competent workers. For each of the specialty areas for which training is provided in the high school, the counselor needs to be informed about (a) job opportunities, (b) the range of jobs available, (c) related occupations, (d) occupational hazards, (e) opportunities for training beyond high school, (f) location of training programs, and (g) how to make arrangements for the students to get such training.

Stage Two of the pilot project, covering the period from July 1965 to June 1966, concentrated on the hospital service field because of the local job opportunities and because this occupational field presented a full skill range from minimally skilled occupations such as kitchen helpers to relatively highly skilled occupational groups such as registered professional nurses requiring a minimum of two years of college preparation. Information on fifty-five occupations was prepared and disseminated to six secondary schools participating in the project. Agencies contributing substantive assistance were the San Diego office of the California State Department of Employment, San Diego area junior colleges, and the Hospital Council of San Diego County. Evaluation of the project was obtained by the use of questionnaires. Student reactions to other occupational literature were also used for comparative purposes. Since student, counselor, and administrator evaluation of the pilot project was highly favorable, the decision was made to submit a proposal to continue developmental activities of the Career Information Center.

During the 1966-67 school year, the Career Information Center project was conducted with partial funding under the research section 4 (c) of the Vocational Education Act of 1963. During this developmental phase, career information was produced for all occupations requiring less than a baccalaureate degree for which training was available in San Diego County and for which there were local job opportunities. This information, on approximately 200 occupations, was disseminated to twelve secondary schools in San Diego County. At the conclusion of the developmental stage (June 1967), an evaluation of the materials and the dissemination procedures secured from students, counselors, and school administrators in the participating schools was made. (5)

The Career Information Center is serving during the 1967-68 school year as a demonstration project with partial financial support being received under the provisions of Title III of the Elementary and Secondary Education Act (P. L. 89-10). This demonstration project will enable all school counselors and administrators in San Diego County to become thoroughly informed on the services of the Regional Career Information Center. The Center is also serving as a model for other geographic areas that wish to establish a similar service.

Method of Operation

VIEW (Vital Information for Education and Work) was chosen as the acronym for this model career information system. Career information is produced for all occupations which require less than a baccalaureate degree for which training is available in San Diego County and for which local job opportunities exist. This information, presently covering approximately 200 occupations, is disseminated to the twelve schools participating in the demonstration project.

The VIEW center is presently staffed with a full-time secretary, a part-time clerk-typist, and a part-time occupations writer. Two guidance coordinators supervise the preparation of materials, provide liaison work with participating school systems and other agencies, and conduct project evaluation activities.

The sources used in preparing the occupational briefs (called VIEWscripts) produced by the Career Information Center include such publications as the *Occupational Outlook Handbook*, commercial publications, locally produced studies, the *Dictionary of Occupational Titles*, and California State Department of Employment publications. Weekly meetings held with department employment representatives provide additional data. Extensive local information is collected from periodic meetings held with representatives from local business, industry, and labor and service organizations, and through telephone contacts with employers and labor unions in San Diego County. Available materials are collected and synthesized, and copy is prepared for the occupational briefs which have a standardized format to present various categories of information.

Each occupation is covered in two four-page VIEWscripts. The first four-page VIEWscript contains general information about the occupation which is generally applicable throughout the United States. The order of presentation, however, differs from that of conventional materials. Instead of beginning with a technically worded lengthy description of the working conditions, the general information VIEWscript introduces an occupation with a very brief statement about the nature of the job accompanied by photographs of workers actually on this job. Then follows a concise but thorough look at the criteria which aspirants must meet including such items as physical health, personality, special abilities, and employer preferences. The second page of the VIEWscript contains a description of the occupation including both its advantages and disadvantages as well as training required and other critical information. The information is presented in this order on the notion that often when a student looks at occupational information, he does not psychologically get beyond the glamourous aspects of the job to look realistically at those items which may ultimately be more important in determining whether he will or will not enter an occupation field. The remaining two pages of the occupation's general VIEWscript contain descriptive data about the requirements and opportunities of the occupation and references to further sources of information.

The second, or local information VIEWscript contains pertinent local information including a list of local institutions that offer training in the occupation, the outlook for each occupation locally, local sources of further information, and when possible a listing of community resource people who have agreed to talk with students about their jobs. Talking with such resource people was rated by the students in the survey sample as probably the best way for them to obtain occupational information. (2) The final page of the local VIEWscript is a check list which permits the student to compare his picture of himself with that presented for the occupation and suggests that he return to his counselor for more information and for aid in decision-making.

When all of this information has been gathered and synthesized into the standard format occupational briefs, a four-phase process places the information in the schools ready for use by the students and staff. In Phase One, the dissemination function of the center is initiated by placing the camera-ready original copy of the VIEWscript page in a processor-camera. The four pages of each VIEWs-ript are photographed together and automatically mounted on one master microfilm aperture card. Since each occupation is covered by two VIEWscripts, two master microfilm aperture cards and produced for each occupation.

Phase Two is the microfilm duplication process in which microfilm copy cards are produced from the master aperture cards by the Career Information Center for distribution to the secondary schools. There are, of course, two copy cards made for each occupation. The first copy card, containing the four pages of general information about an occupation, can be used any place in the state or nation while the second card is appropriate only for local use. The two-card format system thus makes it possible for general information cards to be prepared at a central location while the local information cards can be prepared in each region. Cards could then be exchanged between regional information preparation centers.

In Phase Three the aperture cards are key-punched to provide data processing capabilities for filing and retrieving the cards. Key-punched information includes job title, necessary aptitudes, minimum education required, Dictionary of Occupational Titles code number, applicable high school subjects, interests, and other pertinent variables. These punches are then duplicated in the copy cards.

Phase Four involves both the distribution of materials and inservice training for participating schools. After the final step of key-punching, cards are sent to the participating schools as well as to the California Department of Employment's local Youth Opportunity Center. Staff members of the Career Information Center hold meetings with staff of each participating school, first to explain the project and its rationale and later from time to time during the school year to stress professional use of these materials in the schools. Counselors than acquaint students with the VIEW way of exploring occupations. Students have access to the school's file of microfilm aperture cards and can browse through them for occupational information or, more typically, choose suitable occupations for investigation with the aid of the counselor.

Students further their knowledge of the various occupations available using the reader-scanner and the reader-printer supplied to each project school.

On the reader-scanner a student or students may read the information contained on an entire VIEW-script as he projects the aperture card on the viewing screen. Then, if he is interested in the occupation and wishes to study it further or discuss the information with his parents, he may use the reader-printer to take a printout of any page of information on 8½ x 11 paper. The number of print-outs that may be produced from one aperture card is unlimited and the cost per copy is modest. The advantage of this system over the conventional checking out and returning of materials is obvious. Our experience suggests that many students only wish to read the information and the option of taking away the printed copy is not abused.

After finding one or more occupations of interest, students can discuss with their counselors and teachers the information contained in the print-outs of the VIEWscripts. At this and subsequent meetings they can also explore and discuss their own characteristics and consequently acquire a sound factual base regarding both themselves and the occupational world. This twofold process will enhance both present and future occupational exploration activities.

What's Ahead?

It is self-admitted that our efforts to date represent a modest beginning to the Herculean task of providing career information to all students. VIEW-scripts produced to date have focused upon trade and technical occupations, representing but a small portion of the total spectrum of opportunities. It is apparent, however, that the system can be expanded to cover the total field of career information, including that for professional level occupations.

The next goal for the project is the refinement of a storage and retrieval system for student cumulative records, information on higher education, and financial aid information that will be compatible with the system used for VIEWscripts. A related goal is that of refining the systems work required for computer storage, collation, and retrieval of this data. In the meantime, the San Diego County Career Information Center will continue to explore other applications of microfilm aperture cards to the problem of information storage, retrieval, and dissemination in guidance and counseling. When the services of the San Diego County Career Information Center are fully implemented, guidance information for counselors and students may be found "in the cards".

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INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

Dr. Allan B. Ellis

The Information System for Vocational Decisions which we call ISVD began the first of June, 1966 as the result of an agreement between the U. S. Office of Education and Harvard College.

The purpose of this project is to develop an information system for career choice built on a paradigm of decision-making proposed by Dave Tiedeman and Robert O'Hara both of whom are principal investigators in the Information System for Vocational Decisions. This paradigm depicts the behavior of the individual from his earliest confrontation with a choice situation, to his final analysis of the results. In its simplest form, it states that there are two major components in decision-making, exploration and choice.

An individual having recognized that there is a problem he must solve enters the stage of exploration-sizing up alternatives and options, and locating the risks and consequences--with the aim of structuring and ordering the universe of choices. The individual asks: What is available? What are the possibilities? How do they relate to my goals? What are my goals? How do the alternatives relate to each other? What is the universe from which I can reasonably select a course of action? Once these questions start to be answered the individual is ready to consider choice.

One element in the stage of choice is the moment of choice--that instant at which commitment is made and begins to grow. This moment is skirted by two phases, crystallization prior to choice, and clarification after the choice. Naturally the actual selection of a course of action is important, but it takes on its fullest meaning only in terms of these two adjacent activities. In the crystallization phase of decision-making, the individual assesses the alternative paths of action. What are my chances? How have others liked being managed? How much of a risk is really involved in each case? The products of exploration are worked over, pursued, refined and sifted until, finally, a selection is made.

Then comes clarification after choice, a more extensive following through of the chosen path, to see more fully what one has committed himself to and to test how strongly he maintains his choice. Naturally it is not a one-way road from exploration to crystallization to clarification. These are not all elements of choice. Nor are they, in fact, as clearly separable as the paradigm might suggest.

Throughout the individual's passage from point to point in the decision-making process, he continues to engage in the act of turning data into information. This is a major concern of the project, since in the real world, data are never complete. Often it is precisely this incompleteness that makes a decision necessary in the first place. In any event the quality of the choice depends upon the quality of the data. Before one attempts to make a decision, he must first understand the incompleteness of the data with which he is dealing.

Accepting data on these terms leads naturally to the condition that one is more likely to take responsibility for the choices he makes, since these choices are not totally determined by external factors. If they were, then the choice would be either irrelevant or superfluous. Furthermore, in order to create information on which to base decision, one must actively process data rather than passively be guided by them, and therefore, the individual must become a significant agent in the decision process. The incompleteness of data implies that the individual is responsible for his decisions in both meanings of the word; he is the one who makes the decision, not someone or something external to him; he is the one who enjoys or suffers the consequences. This is one way to define "freedom" and it is to this notion that the project is dedicated. It will achieve this goal by developing in the student the ability to engage in this kind of decision-making relative to his career choice. The project will place the student among resources, enhance his access to them, teach him the stages in decision-making, and have him engage in the resources in a controlled setting, so that he can develop the skills of processing data and making decisions.

An additional factor in the decision-making process which this project proposes is monitoring. It consists in keeping track of the student as he goes from stage to stage through the paradigm. Aside from the usual reasons for monitoring student's behavior--to analyze his performance--select from alternate courses of action, and generally maintain an account of his interaction with a system--the project expects to present to him the facts of this monitoring so that he may use them as additional data. These facts become a kind of meta-data which the student processes. The idea of data and meta-data is analogous to the philosophical notion of being and becoming. Not only does the individual act but he becomes aware of his pattern of action. The desired result is a higher order of understanding of both the decision-making act and the panorama of career choice in which decision points are linked. Career becomes a time-extended set of choices, and decision at any given point is enhanced by an overall awareness of the road being travelled.

What the project proposes, then, is a model of decision-making behavior which requires a setting capable of providing feedback. It is an interactive setting in which an individual engages a data base in certain specifiable ways as a means of determining alternatives and selecting from among them.

Once we rocognize that data are never complete, it becomes wise to place the condition on choice that it be made with the best possible data available. We must ask of the data: Are they accurate? How complete are they? Do they reflect the full complexity with which we must deal? Can we get them in time to explore alternatives adequately?

A library is unsatisfactory in this area, because the time involved in searching is often more than the individual can afford. Certainly large amounts of data--occupational descriptions for example--can be stored, indexed, cross-referenced, and made generally available in a library, but that is only part of what is needed. The computer is capable of all of this and of providing fast access so that search time need not hamper decision-making. Furthermore, the computer can interact with the student and help him to ask relevant questions about the world of work. The project looks to the computer as a device to store large amounts of occupational data and to make them immediately and selectively available to the individual as he proceeds through the decision-making process. With this kind of accessibility, the individual can feel that he is among resources and as he becomes more integrated into the reckoning environment, the data become more like extensions of him and less like external quantities.

The area of decision-making is the second one which the project sees to be dependent upon the use of a computer. As the student goes through the various stages of decision-making, he must be provided a number of things, three of which are particularly important to us. First, he must have the opportunity to browse through a large set of sources and to obtain cues from the system as he goes. Browsing is not an aimless activity, but it is an unstructured one, and the system should facilitate the emergence of order by probing, suggesting, reminding, and generally being at the disposal of the individual. Second, the student must be able to follow up leads, discard them, go as far as he wishes and then start all over again. There should be available to him statistical projections and estimates about himself and about the world of work so that he may compare his own interests and abilities with those who have taken certain courses of action, and can assess his chances and his willingness to pay the price involved in particular alternatives. Finally, he needs a way to relive his past in terms of his present orientation and to act out his future or at least to bring his awareness of the future to bear upon -his current need to make a career decision. The system, therefore, must contain some kind of simulator or game player which can process student information within the larger context of information about the world of work so that the student can engage in what amounts to a "career game."

All of this requires that there be an interface between the student and the data. In many respects a human being--counselor, librarian, teacher, friend, confidant-would be the best interface, although he would not be very good at treating variables in a multi-variate way or at the kinds of real-time search, estimation, computation, recording and presentation that the system requires. It is in these areas that we look to a computer, since they involve operations which a computer can be expected to do well and tirelessly. This is not to say that one will replace the other; we have no such intention of replacing a counselor, especially since neither the counselor nor the computer in this respect is totally satisfactory. They will be used together, each doing what he does best. The computer then, we feel, is indispensable in an effort to create an environment in which the process of career decision-making is to be maximally facilitated.

A third area relates to the new interpretation of the role of monitoring. We do not limit monitoring to diagnosis after the fact. We conceive of a real-time monitoring and feedback system where the student processes the data for monitoring on his way to a decision. The way a person engages a subject when he teaches it differs from the way he engages a subject when he studies it. Not only does he think more about the structure and form of the subject as a means of explaining it, but, as a by-product, he learns something more about the subject and from a different perspective. This kind of by-product can attend the decision-making act as well, and we intend to provide the student with information about the structure and form of his interaction with occupational data, and about his passage through the decision-making procedure, so that he can use facts about himself and the way he goes about making decisions as further active information.

There are three things that our system wishes to provide the student relative to monitoring; the data for monitoring; the facility to reorganize his conception of the process; and the facility to analyze himself in terms of these data. At the end of a given session, the student might be asked to sum up his present situation, to state briefly the reasons behind his chosen course of action, and to describe how he anticipates things will go as a result of this decision. Some of this information might be obtained from tests or questionnaires administered by the system, while other information might be in-putted directly by the student.

It is now clear that the role of the computer, with regard to data, decision-making, and monitoring, is crucial indeed. The answer to the question, "Why ever mention the word 'computer' in the same breath as 'career decision'?" is that, by its very nature, the interactive, reckoning environment, which this project postulates as desirable, requires functions to be performed which can only be performed by a computer and then only after considerable effort. It is the task of the project to explore these functions in greater detail and to specify more precisely the interactive model and the things the computer is to do within it to enhance the process of career-choice.

A DESCRIPTION OF THE PROPOSED REGIONAL EDUCATIONAL CENTER
for
New York State
Problems of Implementation

Dr. Morris S. Shapiro

I am delighted that Mr. Dowd offered me this opportunity to tell you what we are trying to do in New York State in the area of educational data processing.

To understand our approach in the dissemination of this technology, one must have some insight into the philosophy by which the New York State Education Department operates. This philosophy might be summed up in two words; advice and consultation.

We like to think that the work our department does is to furnish professional services that provide a climate in which real educational growth and leadership can work.

To see where we are going let's look back to the history of educational data processing in New York State. The first installation in New York State, outside of the very large school districts, dates back only to 1955. This occurred in a small school district which used unit record equipment to perform various administrative tasks. About six years later we had the first computerized installation in New York State.

The growth of data processing in New York State Schools has been little short of phenomenal. The statistics show that one of every three school districts,and there are some 850 operating school districts in New York State,utilizes some form of data processing for either administrative or pupil personnel work. Today, there has been a change in this state; not only in the equipment which has been upgraded from simple unit record equipment to computerized equipment and configurations, but also in the philosophy which guides the operation of these pieces of equipment. This has changed from using this equipment for administrative tasks solely to a pupil personnel services orientation. I think this is very important; the fact that we are now using computerized equipment, indeed any type of data processing equipment, not only to do the payroll, but even more importantly to help students, to help guidance counselors, to help administrators. We are also planning instructional uses in academic classrooms, and in providing vocational training.

The State's Education Department has begun servicing school districts with their data processing equipment and the problems that arise from their use, by providing consultant services from the Division of Educational Management Services. However, a basic attitude of the department towards educational data processing has been that in as much as it is an administrative function, it should be administered exclusively by the local school district. The result has been a proliferation of systems and procedures throughout the state, and a minimum of coordination in reporting procedures between local and state units. Some districts have been slow in adapting to the new technology; others have moved too quickly with naive over-enthusiasm and disastrous results.

At the state level we were concerned about two aspects of this tremendous growth. One, the lack of effectiveness in using this equipment economically, and two, the poor communication insofar as reporting was concerned between the local school districts and the state units. In many instances reports were repetitive, and cost dearly in administrative time.

We did a systems analysis of reporting from the school districts to these various state departments, and we uncovered the fact that each school district completed something like 300 separate reports that went to the State Education Department. It is amazing how many reports overlap and repeat themselves or come out with the same types of information. To combat this, we have developed the basic educational data system.

This is a one-time deal where during one day of the year schools and professional staff members and students will complete an optically scanning sheet. These sheets are sent to our Division of Electronic Data Processing, processed at the rate of 2400 an hour directly on magnetic tape where they are now on file. If a teacher should change schools or should obtain a new degree on one day of each year, she will update the sheet which will in turn update the "mag" tape.

The problem of providing uniformity in the myriad of data processing systems set up through the state still exists. We have 100 data processing units in New York State, of which 30 are all in a form of educational services; that is they are cooperative organizations that serve individual school districts. They act similarly to a surface unit, surface bureau we should say, but they also have 80 individual data processing units set up by individual school districts: Each one of them going pretty much its own way. It was determined that a study should be made of the possibility of regionalizing the state for data processing. Accordingly, a proposal was written and $115,000 obtained under Title V ESEA. A contract for this type of study was signed in February, 1966 with the System Developing Corporation of Santa Monica, California. The study was completed 21 months later in November, 1967.

I would like to review the rationale of this study and the outcomes expected. There are two questions that we want this System Developing Corporation study to answer for us: (1) is regionalization of data processing within the school districts in New York State possible and (2) if so, will this regionalization be economical in terms of money and services rendered to the school districts themselves. In 21 months the answer came back to both of these questions: Yes.

There are several fundamental reasons for the support of the regionalization plan. Primarily, every school district in New York State will have access to data processing services. It is expected that these services will result in superior information systems for administrators as well as relieving teachers and other school officials of clerical tasks not directly related to the teaching process. Another important reason for encouraging the implementation of a statewide regional plan is economy. The plan of regionalization, because of a large number of students in a regional area, should result in a minimum per unit cost for a wide range of applications. Another reason related to economy is the standardization of programs in the data base. Last night you heard Mr. Anderson of RAI, Inc. tell you that the true cost in the data processing systems is not the hardware.

You have got to use it on a two or three shift basis. It is the software that costs. A by-product of standardization will be the elimination of the necessity of reindoctrinating teachers and administrators with data processing procedures when they move from district to district.

Finally, I would like to cite an outstanding reason for regionalization; namely, operational control. With operational control there will come into being an orderly procedure by which men, ideas, and machines may best interact and be directed toward the solution of administrative problems by means of data processing techniques.

The SDC plan was written in five phases. We started out with a survey of data processing in New York State. We observed programs throughout the school districts, and discovered the types of problems they had. We tried to elicit from them what they were after in data processing. The final phase of the SDC report was received with some summarization. Now, this system description will concern itself with the criteria for developing the region. We divided the regional centers so that each one of them contained approximately 150,000 pupils.

There is one other thing which we purposely omitted. That was Computer Assisted Instruction. Currently we have Computer Assisted Instruction in operation in Westchester County on an experimental basis with IBM picking up most of the tab, which is $40.00 per pupil. When the cost comes down to about eight cents per pupil period, then you'll have computer assisted instruction.

You might also be interested that CAI is being performed routinely at the state university systems. If you want to see it in operation, go out to Stonybrook where they are teaching courses in statistics, mathematics, and physics using CAI. Or go to the University of Buffalo which is using it for some mathematics courses.

We are also developing regions on the basis of physical factors, such as mountains, lakes, valleys, etc. We also need to remember that in each one of these 12 regions, there was at least one large city. Unless you have a large city you are not going to get personnel to operate the data processing center. Three of 12 regions were designated as evaluation and training centers.

We are going to evaluate programs and equipment in these centers. They will be training centers in that each one of them is adjacent to a university, so that research and training of potential school administrators can take place there. They are also going to have powered equipment so that they can develop new ideas. Also, each one of these centers has an unusual concentration of pupils.

Let me tell you about the types of services we propose to offer to school system. There are four sub programs or packages. We have one package, which as guidance counselors, will make you very happy. It is the pupil package. Guidance counselors are concerned with such items as grade reporting, permanent records, test scoring and analysis. In New York State the guidance counselor is concerned with scheduling. Scheduling is changing. Where once we had nice little blocks of time, 45 minutes each, newer methods of instruction requires modules of time. We might have a student that has a one hour lecture, three twenty minute recitations, and a two hour lab. In order to schedule him we are going to have to use one of the newer scheduling techniques.

We also have a personnel package, a financial package, and a facilities package.

Let me briefly discuss with you some of the problems involved in implementation. I'd say that these problems are basically psychological. I think most of the problem you're going to have to combat, if you ever hope to get a regional set up in New England is reluctance to surrender local control.

Another factor is the fear of bigness. People are afraid of bigness and they are reluctant to join.

Another item, again this is for the administrators, is what I choose to call the "prima-donna" syndrome. This is where people have developed something that is all theirs, and they don't want anyone to touch it.

These are some of the more important problems which will have to be faced in implementing regional educational centers, but with long-range planning, understanding, and innovative thought, this type of regionalization can become a fact.

DEFENSE DEPARTMENT STUDY OF GUIDANCE AND COUNSELING SERVICES IN MILITARY EDUCATION PROGRAMS

Lieutenant Col. Ruth A. Lucas

The process and problems of career choice are as much a concern to the Department of Defense as they are to our public and private schools. Professional guidance services - designed to facilitate career choice - are under study in both the "military" and "civilian" communities. The quality of professional preparation, and the use of the "new technology" in vocational guidance are questions which are equally relevant in whatever setting guidance services are provided. The following study-though it was conducted by the Department of Defense, is similar to a study undertaken by the New England Educational Assessment Project. It serves as a bridge in the presentations of the Second Conference whose theme is: The Emerging Role of Guidance in the Schools.

The Department of Defense Study

The title is "A Study of Off-Duty Educational Services for Military Personnel." The services under study are:

- Counseling
- Providing information on education and occupations
- Testing and evaluation
- Advisement
- Registration and enrollment
- Follow-up

A questionnaire was distributed in September 1967 by the Director for Education Programs and Management Training to Education Officers (Advisers) and all other personnel in the Military Department (excluding those in combat areas) who have responsibility for performing any of the educational services described.

The questionnaire was in two parts. Part I - Education Functions - Program Information. This was filled out by the Education Officer responsible for the program.

Part II - Personal Data. This was also completed by all Education Officers and all other persons performing these services.

Purpose:

To appraise current practices, to identify situational factors that stand between an individual and educational opportunities, to provide analysis of the need for more and better guidance by men with pre-service educational deficiencies.

There is evidence that counseling in our programs is not as effective as it should be. We need to know whether selection criteria for Education Officers and Counselors are relevant to the requirement and whether their training is proper. We are concerned as well with the fact that although educational and career development opportunities have greatly increased for the military, there are situational factors like location, mission requirements, command structure, discontinuity of assignment, for example, that make it very difficult for the individual to learn about them or to participate in a meaningful way. Yet in some programs many individuals have been able to work through these difficulties and to take advantage of educational opportunities.

We will describe such programs and the qualifications of the education officers who manage them. We will describe the special capabilities needed to overcome situational constraints.

Our concerns are with guidance services for the military and we recognize a need for reform. However, the questions we are asking here are being asked nationwide and the need for reform is great nationwide.

Three studies are relevant:

1. "The Role of the Secondary Schools in
   the Preparation of Youth for Employment"
   Institute for Research on Human Resources--Pennsylvania State University.
   February 1967
   Kaufman, Schaefer, Lewis and others

2. Guidance Survey - New England Educational
   Assessment Project (in process)
   Richard Dowd
   Executive Secretary
   Rhode Island

3. Columbia University Conservation of Human
   Resources Project - Dr. Eli Ginzberg
   (2 year study in process)

I wish to cite a statement from the Pennsylvania State University study on vocational guidance, "The Role of the Secondary Schools in the Preparation of Youth for Employment":

> "An evaluation of the effectiveness of vocational guidance was impossible because so little of it is being conducted."

CONFERENCE SUMMARY

Dr. George S. Elias

This conference was designed to bring about the more active involvement of the guidance specialist by: (1) making the unknown at least partially known and understood; (2) facilitating communication by bringing together the guidance specialist and the computer-information specialist; and (3) determining the feasibility of Vocational Guidance Information Systems in New England on a regional, state, and local level.

Inroads into these objectives have been made. The formal presentations and lively small group discussions produced, in part, the following:

1. An overview of the mysterious world of computers and their relationship to vocational guidance information systems. As different information systems were described, it became apparent that existing guidance practices are being relied upon quite heavily. A major concern is that current practices are being relied upon too heavily. The question that many are asking at the conference is: "Are we, through the use of the new technology, perpetuating and compounding poor guidance practices?"

2. It also became apparent that we were discussing two different uses of computers: (a) an information-retrieval system designed to provide statistical data for the professional; and (b) a system which would provide information and interact with the student who was in the process of

decision-making. The manner in which the computer interacts with the student and affects the decision making process is determined in large part by the "programmer". It is within this context that the question of "values" becomes crucial.

3. An important concern of the conference participants was directed to the cost of such information systems. Must there be regional cooperation for such programs to be financially feasible? If so, can material be developed that would have equal relevance to the needs of all students in the six New England states? The answer again appears to rest with the answer to a basic question which must first be answered by the professional guidance counselor: "Guidance-Quo-Vadis: where goest thou".

Summary

A review of the conference proceedings demonstrates beyond question that the major problem in communication is communication. Information systems in vocational guidance are being designed to communicate required data to the student who is in process of making a vocational-educational choice. For these information systems to be meaningful it is imperative that the professional guidance counselors become actively involved in this development. This involvement must consist of a determination of the basic content; as well as the "value" basis upon which this content is to be "handled" by the student. It is in this involvement that there is a communication breakdown between the professional guidance counselor and the computer-information specialist.

Up to this point the computer specialists have taken the lead. They have build their "value" structure into these systems through the development of the programs and a selection on how these programs will be integrated into the decision making process. That this cannot be allowed is obvious. For vocational guidance information systems to serve the professional need for which they are being designed a collaborative effort must be instituted between the guidance counselor and the computer-information specialist.

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CONFERENCE II

THE EMERGING ROLE OF GUIDANCE IN THE SCHOOLS

Hartford, Connecticut

March 12, 1968

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NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

THEME: The Emerging Role of Guidance in the Schools

Orientation to the Conference by Miss Eileen Matteo

It would seem to me that each of us participating in this conference in all probability must share several concerns and objectives when we think in terms of the theme under consideration at this meeting. Each of us can claim an interest in and/or concern for elementary school guidance. That the need exists to delineate the functions of elementary school guidance programs and their personnel cannot be denied. This conference should serve to assist these efforts as we share ideas and discuss current practices.

That a reappraisal of the guidance function of education and its relation to instruction and administration must be set in motion if the schools are to handle effectively the total job that the society thrusts upon them is recognized. Concomitant with this broader reexamination of the total educational process has come this reappraisal of the guidance function. This has resulted in other specialties within the fields of psychology and education being integrated with that of guidance to make up the total package known as pupil personnel services. Counselors are now viewed as members of a team which includes psychologists, social workers, and health personnel among others. That a clearer definition of pupil personnel services and its relationship to guidance services is both timely and essential cannot be denied. Those of us at this conference may touch upon, consider, or even assist in the many attempts to define the functions of the various individuals who have responsibilities for pupil personnel services as their primary function within our schools. Included here, of course, would be the role of the elementary school counselor.

And, lastly, from this conference may result some revealing and, hopefully, objective viewpoints on the role of special education relative to the team approach. This conference should help us to look to the future. Certainly the quality of our services should be enhanced by the exchange of valuable insights and the integration of viewpoints throughout this conference.

It is the hope of the Guidance Committee of the New England Educational Assessment Project that this conference not only will assist each of us as we attempt to fulfill our obligations and responsibilities within today's educational setting, but also that it will prove to be a stimulating, thought-provoking, and challenging experience as each of us seeks new and more efficient ways of providing better services for the youth of our nation.

THE EMERGING ROLE OF GUIDANCE

IN THE ELEMENTARY SCHOOLS

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Ohio University, Athens

Innovations in institutional practices never come easily. This is as true, perhaps even more true, in educational institutions as in any of the many other organized agencies and processes which our society supports to achieve objectives determined to be of significance to our social order. Why is change difficult? The answers are not hard to find. Institutions are staffed by people; and people do not change established habits with ease. Innovation in schools usually involves changes in the functions to be performed by staff members. This upsets the comfortable routines of the past. If the changes being effected entail introduction of newly-defined positions, to be filled by new personnel, those who have been on the staff may even see this as a threat to their "rights", an intrusion upon their well-established domains.

Resistance to change in schools also arises from very honest beliefs regarding what the schools are supposed to accomplish and how these achievements may best be attained. Such beliefs can be held both by members of the staff and by community patrons of the school.

The emergence in the past two or three decades of a strong emphasis on guidance in American elementary schools has been characterized by the same resistance and misunderstandings experienced in all significant changes since the beginnings of tax-supported public education. With a good many decades of experience and with several significant forerunners of the current guidance movement to help us, we should be able to examine the emerging guidance program in the elementary schools dispassionately from these points of view.

First, there are the forces and the background experiences which have given rise to the serious effort at organized, professionally staffed guidance services in the elementary schools.

Second, there is the question of current theory and practice regarding the functions of the elementary school in our society.

Third, there are our theories and our practices regarding how children may best be helped to develop into the kinds of citizens this complex and demanding culture of ours will expect in the decades ahead.

Fourth, there is the question of how the future of the elementary guidance program is being affected by current practice.

Finally, there is the professional guidance worker in the elementary school, the elementary school counselor.

We would like to examine these five matters in the order in which they are listed. The complexities of these five subjects will force us to treat them here with a brevity which will doubtless leave issues unresolved.

Background of the Current Guidance Movement

Earlier Movements. It is not possible to understand what is going on in today's elementary schools without recalling what has been happening in these schools since the turn of the twentieth century. Several movements and counter-movements have had an important impact and have produced significant changes in the aims, curriculums, instructional processes, staffing and administration of the school. With no intent to suggest an order of their emergence, these movements may be labeled as follows:

The Progressive Education Movement.
The Child Study Movement.
The Mental Health Movement.
The Community School Movement.

These movements did not have their origins exclusively in the schools. Leaders who exercised the most vigorous and critical impact upon school practice often came from the community agencies and university faculties.

Present Forces. More recently and with special impact in the present decade, we witness the development of changes in elementary schools which spring from what might well be called "explosions":

> There has been an explosion of knowledge which had pressured elementary school teachers to teach more and more about more and more.
>
> There has been an explosion of fear which has impelled our schools' critics to charge that our teaching is not efficient enough, that we need to teach more and more better and better.
>
> There has been an explosion of population. More and more children come to schools to be taught.
>
> There has been an explosion of concern and of know-how in school practice. Our understanding of what constitutes good education has grown rapidly and our sensitivity to the true needs of children has sharpened.
>
> Finally, there have been explosions of self-indulgence and of inflation which made adequate public support of the schools difficult to achieve.

The first two of these explosions, complicated by the other three, have produced conditions within the typical elementary school which have made the staffs willing and eager to seek help. The typical American elementary school, for example, is grossly under-staffed. The presence of professional pupil personnel workers on elementary school staffs is the exception, rather than the rule. A national survey of as recent date as 1963 showed this (Smith and Eckerson).

Current guidance movement. The current guidance movement in our elementary schools is primarily an effort to make better use of what we know about childhood education by employing personnel who can systematize, enrich and enhance the performance of certain functions which will help children develop and learn as effectively as possible. Help is being given by persons with graduate preparation specifically directed to the needs of the children of the elementary schools and to the needs of a society experiencing rapid change on many fronts.

The Functions of the Modern Elementary School

There is a strange mixture of agreement and disagreement regarding what our elementary schools may reasonably be expected to accomplish. Doubtless the majority of Americans, educators and laymen alike, would say the intellectual goals are the school's main responsibility; yet many of us find it difficult to see intellectual achievement as an end which can either be effectively reached or humanely used without equal attention to the special and emotional development of the growing child.

For our purposes, we accept the idea that the child comes to school, first of all, as a whole human being; that his education -- be it intellectual, vocational and social-emotional by label -- is going to be effective only as it considers this child as a unique human being. Thus, the school must ask itself: What, above all else, are we concerned that a child learn as he moves through these grades? What do we and this child's parents agree we most want for this little girl, or this little boy? If we try, for a moment, to center our attention upon the youngster, and not upon the long-standing expectations of a school curriculum guide or the pronouncements of a "society for the preservation of the fundamentals," we tend to come up with answers much like those I have formulated elsewhere as "the guidance learnings". (Hill, Ch. 2, Hill and Luckey, Ch. 1) Such learnings as these are not the property of some particular segment of the school staff; they are the learnings that all good parents, teachers, administrators, counselors and others want children to achieve:

> The child will mature in his understanding of himself.
> The child will mature in his sense of responsibility for himself and for the full use of his abilities.
> The child will mature in his understanding of human relations, how people live together harmoniously and happily.
> The child will mature in his skill in interpersonal relations.
> The child will mature in his ability to make decisions and to solve his own problems.
> The child will mature in his understanding of the importance of education and of work in our society, in his planning for the fullest possible education, and his ultimate participation as a productive worker.
> The child will mature in the achievement of values and ideals which constitute the core of his philosophy of life.

The usual intellectual goals of the elementary school make such learnings as these functional and usable in our modern world. They are achieved -- all of these learnings -- in a school which fosters originality and individuality and which helps children understand, accept, and know how to deal with the fact of change in their lives. It is perhaps fair to assert that the ability to meet changing life conditions must be a central emphasis in all effective learning and teaching in a modern school.

The school staff that accepts this point of view regarding goals sees each child as needing the most accessible and most perceptive possible guidance as he proceeds through his schooling. This staff also sees that this guidance is a responsibility of all the adults in the child's life. But they also see that the systematizing and the professionalizing of the guidance function is most apt to come about if professionally trained guidance personnel are available as collaborators in the school's efforts to individualize and to personalize the child's educational experiences.

Criteria of Effective Elementary Education

How may children best be helped to develop into the kinds of citizens this complex and demanding culture of ours will expect in the decade ahead? The process of education for the young child must be both individualized and personalized. All learning is an individual, personal matter.

This kind of educational process has three characteristics:

1. It is developmental; starts where the child is and takes him along toward where he ought to go.

2. It is relevant; it relates to life as the child sees it, makes sense to him as something he views as worth experiencing because he can see that it makes his living more worthwhile.

3. It is integrative; it hangs together; the parts don't fall apart; one experience does not deny the validity of another experience.

One can see how necessary it is to have a school staff professionally competent and adequate in total time-and-competency characteristics, if these standards are to be met. The teacher needs help in achieving greater depth in her perception of a unique child's current status. The teacher could surely profit by the insights gained through some personal chats between a pupil and a perceptive, accepting counselor. Staff sessions led by a person who has worked hard to assemble all the facts he can about a pupil would help his teacher, the principal, his playground supervisor and the others who have contacts with him to effect a total experience for him which he will find both meaningful and integrated.

Current Practices in Elementary School Guidance

The development of sensible, productive pupil personnel programs in our schools demands that we establish a sound conceptual basis for these programs and that we examine and evaluate practices which seek to put these ideas into practice. Theory is useful and necessary; but theory tested in practice forms the actual foundation for improved programs.

What is currently happening in American elementary schools in the name of guidance? First, it is necessary to clarify a term. To us "guidance" refers both to a point of view and to certain professional functions which are identifiable as sufficiently different from the other pupil personnel functions to warrant their own name.

Impressions from visits to elementary schools in twenty-seven states over the past eighteen months follow:

1. There is substantial agreement as to the need for better guidance for children in our elementary schools.

2. Agreement regarding the purposes of a guidance program in the elementary school is also widespread.

3. This observer has found much agreement regarding the essential elements in an effective elementary school guidance program. What are these elements? One is an enriched program of child study that shifts the emphasis from the child as an object of study to the child in the role of partner in a process of self-study for enhanced self-understanding. A second element

is the counseling service for the individual and for small groups of children. Many teachers and some principals still see this element as their responsibility. In scores of schools, however, teachers and principals have long since accepted skilled, professional counseling service as an important contribution by the trained counselor. The third major emphasis in current programs is upon coordination of the various special services, usually by the school counselor. This service is tied closely with better coordination of the work of home and school. The fourth involves collaborative and consultative work with teacher colleagues. A final common program element is the improvement of the school's efforts at research and development.

4. There seems to be little disagreement that the pupil services in elementary schools can be better coordinated and managed. The day of incidental guidance services in many elementary schools is past. Most schools are too dreadfully under-staffed to have an adequate team effortt.

The Elementary School Counselor

Our fifth generalization from visits to elementary schools is that elementary school counselors have emerged in hundreds of schools as professional staff members accepted by their colleagues and performing important functions as indicated in our list of program elements in item 4 above.

There have been various titles given this guidance worker. It is my conviction that he is best called a school counselor. This was also the decision of the members of ACES and ASCA at the 1966 convention when asked to vote on the matter after hearing the ACES-ASCA joint committee report on the elementary school counselor.

The duties of this worker are emerging in current theory and practice. There follows an example of what one state group developed by way of role definition, a definition which I accept and which comes very close to what is most commonly found in current school practice.

The elementary school counselor's duties are emerging from guidance program development, from theoretical considerations, and from proper adaptations of our long experience in various phases of pupil personnel work at all levels of education.

1. To provide services to children through counseling.

2. To provide assistance to teachers as they seek to meet the needs of the children.

3. To provide assistance to children through the conduct of small group sessions involving children with special common needs or problems.

4. To provide teachers with help in the achievement of understanding children.

5. To serve as a resource person with parents, in assisting them to provide home environments that will contribute to the best development of their children.

6. To serve as a referral agent, assisting with the proper referral of children to psychological, health, social service, and other special services both in the schools and in the community.

7. To serve as an aide to other staff members in effecting proper referrals for children needing assistance from other specialist or agencies.

8. To serve as a resource person, with the principal and others, in the organization of a guidance program that is continuous throughout the school system and is properly articulated with other school systems.

9. To take leadership in the coordination of the total program of pupil personnel services through continued planning and cooperative work with the whole staff.

10. To serve as a resource person in the planning and conduct of such inservice and school planning activities as are needed to keep the school program, and the guidance program in particular, in a constant state of improvement.

One of the serious lacks in the education of elementary school counselors is proper consideration of the wide scope and complexity of their duties. Thus the usual one-year, master's degree program is inadequate. There need to be many new efforts to up-grade the preparation of the elementary school counselor through university-school system cooperation in on-the-job advanced preparation. This, in our opinion, is the only way we are going to achieve much by way of the equivalent of two years of graduate education, either for the elementary or the secondary school counselors.

What of the Future?

As we look into the decades ahead, can we hope for the development of theoretically sound and practically feasible guidance programs in our elementary schools? Perhaps an answer to this can be given by indicating what we see to be the liabilities and the assets of the guidance movement in 1968.

The Liabilities

Newness, the recency of its inception into the elementary schools as an organized effort, is one of the distinct handicaps of the current elementary school guidance movement.

The rise of a strong academic emphasis in all aspects of America's educational programs is a second handicap. Essentially, this has been a move to revert to a narrower conception of educational purpose which places intellect first and, unfortunately, seems at times to have sought to isolate the child's mind from the rest of his being.

A third liability of the elementary school guidance movement is the seeming indifference or ignorance of too many guidance personnel regarding the significance of this developing emphasis in the elementary schools.

There is little doubt of the skepticism of many teachers, administrators, school psychologists, school social workers and other educators regarding this thing called "guidance" in elementary schools. To a degree, this skepticism is a wholesome and helpful force. Enthusiasts need to have their bubbles pricked, if their proposals are of the bubble quality. An honest doubter can often do as much as, or more than, an exuberant proponent in the orderly and sensible development of a program.

A fifth handicap of the guidance movement in elementary schools is the dearth of major research efforts to provide the theoretical and the applied bases for program development.

Professional groups jockeying for the maintenance of power and position constitute an unfortunate block to program development in some situations. This handicap is usually the consequence of the failure of pupil personnel leadership to bring the various staff personnel together in frank and cooperative study of the needs of the children of the schools.

The slowness with which well-defined programs for the presentation of elementary school counselors and guidance administrators have come into being in the universities is a cause of considerable concern for the future of the guidance movement. Many universities still are providing only minimal opportunities for elementary school counselor preparation.

This is not an encouraging picture, but it is our belief that it is an honest one. But all is not lost! There are also a number of significant assets and rapidly developing forces in American education.

The Assets

The presence on thousands of elementary school staffs of well-trained, professionally-minded, child-centered teachers is the greatest asset of the elementary school guidance movement. Add to this the fact that many of the principals of these same schools are men and women dedicated to, and skilled in, meeting the needs of the children in their schools, and one is encouraged by the context within which significant programs of guidance are forming in hundreds of elementary schools.

A second contributing force of great potential is the growing leadership and resourcefulness of state departments of education in this field.

The burgeonning of professional organizations, both in number and in strength, constitutes a hopeful force in the elementary school guidance movement. Counselors in the elementary schools are pushing for greater recognition in the American School Counselors Association. They have gained support for their own publication. The tremendous growth of inservice programs of study and development in local and state school systems is a fourth great asset.

Fifthly, the impact of Federal fundings on a variety of elementary school guidance programs has been pronounced. Such fundings have affected both local and state program development efforts, even though problems have arisen concerning the staffing of these projects and the sharing of the findings.

A sixth and last asset is difficult to define as a specific force or as the consequence of the efforts of a particular group. We refer to a distinct and important change in the general climate of thinking and concern in American life. Perhaps the simplest way to characterize this is to say that we have been experiencing a revival of concern for children as human beings. There has been a distinct reaction against the narrow intellectualism of the fifties, and a much greater concern for the broad education of children for humane and responsible citizenship.

A recent development which promises to provide much needed help in staffing sound programs is the use of properly-prepared guidance assistants for some of the more routine, sub-professional services both counselors and teachers are commonly expected to perform.

Those seeking to exercise leadership for better services for children work today in an atmosphere that is both difficult and encouraging. It has always been thus, and will always be, for the professional who seeks to increase the effectiveness of his work. Above all, we would plead that in the days ahead educational efforts be constantly focused on the primary objects of good education: the individual child. When the individual educator, or any group of school staff members, keeps this focus, we need have little fear that selfishness, ignorance, or ineptness will long prevent the development of effective educational programs for the children at hand.

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RELATING GUIDANCE SERVICES TO PUPIL PERSONNEL SERVICES

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The implication of the conference theme is clear: guidance has not yet fully emerged in the schools. This is undoubtedly true although many of us have felt during recent years as if the role of guidance in the schools were fairly clearly defined even though there is much yet to be accomplished in terms of implementation. The problem, as I see it, is not lack of agreement as to what constitutes the guidance services; nor is it confusion over how it should be organized and administered. Rather, the problem is our failure to convince the public at large and our fellow educators, that guidance services constitute as important a phase of our educational program as do the instructional and administrative aspects of the school program. Part of the problem, I'm sure, is a semantic one which stems from the "confusion of tongues" that exists throughout the educational establishment.

Clarification of terms will help us to communicate more effectively to the various groups of people who must be convinced of the need for improved guidance programs in our schools before we can achieve the full realization of our objectives.

Much of the confusion stems from uncertainty concerning the meaning of terms like "guidance", whether it be used as a noun with such deceptive adjectives as "elementary school", "group", "educational", "vocational", or whether it be used as an adjective to describe a person, a program, a function, or a group of services. There is also confusion concerning the meaning of such phrases as "pupil personnel services", "student personnel services", "guidance counselor", "counseling", etc. I should like to propose a concept of the educational program which has the potentiality, at least, of setting these various phrases and terms into their proper relationship with each other, thereby eliminating some of the confusion, and describing how guidance services relate to and are coordinated with other pupil personnel services.

Basic to this concept is the notion that the educational program includes three rather distinct but overlapping functions: the instructional function, which is carried out primarily by the teaching staff; the administrative function, which is carried out primarily by the superintendent, principals, supervisors, and others especially designated as administrative officers; and third, the guidance function which is carried out primarily by school counselors, school psychologists, school social workers, and other specialized personnel workers. Within such a framework, the term "pupil personnel services" designates the segment of the organized educational program which is designed to provide for "the guidance function" in education. It has as its primary objective the helping of each pupil to get the most out of his school experiences. "Pupil personnel services" include the following:

1. Health Services. Since the health services are primarily non-instructional in nature, they should be included under the heading of pupil personnel services rather than under the heading of instructional services.

2. Adjustive Services are a part of the pupil personnel services program. These include the help provided by school psychologists, school social workers, and school psychiatrists. The school should concern itself with all those aspects of pupil's life which have a direct, immediate and lasting influence on his ability to learn.

3. Remedial Services also may be classified under this heading. These include speech and hearing therapy and remedial reading. Since the identification of students who have special needs in these areas and the diagnosis of these difficulties are certainly not instructional in nature, a case can be made for including

the entire range of remedial services under pupil personnel services.

4. Pupil Accounting may be considered either part of the guidance function or the administrative function. To be sure, pupil accounting includes elements of both. Such activities as taking the school census, enforcing compulsory attendance laws, determining attendance boundaries, etc. may be done by an administrator who is sensitive to the guidance implications of these activities, or they may be performed by a guidance specialist who has the necessary administrative authority to carry them out.

5. The Guidance Program is the heart of the pupil personnel services. However, as implied by the inclusion of four other headings under this general category, it is clear that the guidance program in and of itself does not adequately provide for the guidance function in education.

Counseling is the heart of the guidance program and hence of pupil personnel services. When thus conceived, counseling becomes the focal point around which the rest of the program rotates. By counseling, we mean a unique kind of a face-to-face relationship between pupil and counselor which is based upon a recognition on the part of the pupil of his need and desire to talk with the counselor. It is unique in that it is non-evaluative and non-judgmental. It is characterized by a special brand of mutual respect, a special type of communication, and by a genuine and complete acceptance of the pupil by the counselor in such a way that the two of them together can concentrate on the needs, problems, and feeling of the pupil. It is not reasonable to assume that teachers, most of whom have had no special training in counseling, can perform this function effectively. They may, of course, contribute to the carrying out of the guidance function in education.

It seems obvious that if it is to be completely effective, a program of pupil personnel services, designed to provide for the guidance function in education as here broadly conceived, must be organized to represent the entire range of the pupil's school experience. A pupil at any grade level should have an opportunity to discuss matters that concern him with a professionally trained counselor. He should also have the services, whatever they may be, that will enable him to get the most out of his educational experiences. In a very real sense, the entire pupil personnel services program must be pupil centered.

If we think of the guidance function in education as that portion of the educational program which is provided through the division of pupil personnel services and if we see the guidance program as only one of several programs designed to provide for this guidance function, we should be able to avoid some of the confusion which usually attends the use of the term guidance. Also, if we accept the idea that counseling is the unique relationship described, we can eliminate much of the confusion that results from the use of this term to apply to practically any person-to-person or any face-to-face relationship.

If we can convince school boards and school administrators that there is wisdom in organizing the administrative structure of the schools on the basis of these three functional divisions - the instructional function, the administrative function, and the guidance function, - we can contribute further to the elimination of confusion.

Let us look specifically at the question of how to relate the guidance services to other pupil personnel services. If we can agree that the entire range of pupil personnel services should be administered by a second-echelon school official who is professionally trained in this area of specialization, we can rest assured that part of the problem has already been solved. In other words, all pupil personnel specialists - school counselors, school psychologists, school social workers, speech and hearing specialists, school nurses, school psychiatrists, and remedial reading specialists - will hold positions in the division of pupil personnel services. There should be no confusion if the entire range of pupil personnel services is under the administrative authority and responsibility of a director. The need for clarification of roles and careful delineation of lines of responsibility is apparent. Also apparent is the need for a carefully conceived table of organization. When all types of professional people working in a school system are recognized as equally important and as comparable in their level of competence, there is a much greater likelihood that cooperative relationships will be maintained and that the various specialists will coordinate their activities with others who are working with the same children. Details as to how the program will operate, and who shall handle specific kinds of cases must be worked out. As long as we all focus our attention on the pupil and his needs, rather than on each other or on any narrowly conceived notion of who is best qualified to help a given pupil, we will succeed not only in relating guidance services to the broad range of pupil personnel services, but also in relating the pupil personnel services to the instructional and administrative services of the schools to the benefit of every child during his entire school career.

AN OVERVIEW OF ELEMENTARY SCHOOL GUIDANCE

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I. Historical Review of Literature

In spite of the many recent publications in the field of elementary guidance and counseling, few, if any, have devoted much discussion to the theoretical bases for either the guidance function or the counseling process in the elementary school. This situation is due to a number of factors, not the least of which is the lack until recently of solid, creative or empirical research leading to the nature of guidance theory, regardless of educational level. The current concern for developing acceptable theoretical formulations of purposes, functions and practices characterising the guidance process or function in education is predicated on the need for independent theories of guidance (Kehas, 1966) not immediately derived from other disciplines.

Guidance and counseling in the elementary school appear to be seen in a contextual relationship with several larger elements: the goals of education, the guidance function in education, the guidance function in the elementary school, implementation of the guidance function through the guidance process, and guidance and counseling outcomes. Within the broad goals of education, the guidance function, as distinct from instruction, emphasizes decisions, goals, plans and value judgments, while instruction stresses the acquisition of knowledge, skills, concepts, and facts (Cottingham, 1962). With few exceptions, the developmental character of educational experiences as described by Mussen (1963) is strongly supported by those concerned with the definition of the elementary school guidance function.

In implementing the guidance function at the elementary school level, many authorities agree that it is carried out both within and beyond instruction.

Assessing the outcomes of the guidance process calls for an examination of human behavior changes in terms of (1) the acquisition of skills, knowledge and facts (societal expectations) as well as (2) maturity as related to reality, others, self, and values and meaning (self needs).

Although no postulated theories of guidance applicable to the elementary school currently exist, Munson (1966) has developed "A Rationale for Elementary School Guidance" which gives serious consideration to the social and psychological origns of guidance at this level, drawing upon Bloom's (1956) cognitive domain, Krathwohl and others (1964) affective domain, and on Bruner's (1964) theories of instruction. Grams (1966) proposed a "learner-centered competence building theory" as a postulated base for elementary school guidance. Faust, a third theorist, bases his position on the assumption that the primary goal of public education is the development of intellective or cognitive processes, i.e., knowing how to read, manipulate numbers or other content material. Thus the guidance function of the teacher or counselor centers upon the shaping of a learning climate which will free children to learn, recognizing that anxiety, fear and other defensive posturing inhibits the learning process. Faust's primary objective for guidance appears to be learning efficiency in subject areas.

II. Characteristics of Guidance in the Elementary School.

A. Purposes

The purposes of guidance, or of the guidance function in education, must be compatible with the broader, more inclusive goals of the elementary school. Initially, it is possible to broadly categorize sources of objectives to meet pupil needs into (1) studies of learners (psycho-social concerns) and (2) studies of society (cultural heritage). In turn, activities developed to implement these goals are sometimes dichotomized into guidance and instruction, although obviously neither is mutually exclusive.

Several specific purposes can be cited to explain the goals of guidance activities in the elementary school. One significant purpose of guidance work at this level is the development of a sense of responsibility and self-understanding that permits the child to react with confidence to his environmental demands and explore with personal security choices open to him. The outcomes of this goal, if successful, should be an awareness by the child of his unique self as the central figure in a meaningful existence, strengthened by freedom derived from responsible interaction with life's challenge. Another non-academic learning associated with guidance is pupil assistance in making decisions resolving personal concerns and working toward emotional maturity. This goal of personal adequacy stresses removal of intrapersonal conflicts which, when reduced or eliminated, give the child psychological freedom to accept himself and thus be able to function at a higher intellectual level. A third purpose of guidance activity with elementary children is that of social development, including not only interpersonal communication skills, but an appreciation for and an identification with proper value judgments expected by society. A final goal of guidance centers upon aiding youth to acquire an understanding of the role of education, work, and leisure time in an increasingly complex occupational world. This purpose assumes provisions for children to continually evaluate their own educational and vocational capabilities in relation to our ever changing employment opportunities and requirements.

B. Characteristics

Essentially, as Patouillet expresses it, guidance is seeking a greater degree of self discovery and fulfillment through educational experiences that are meaningful to the individual. Expressed differently, guidance stresses individualized education which aims to strengthen the uniqueness of the child by releasing his native potential to react freely and individually to the knowledge transmitted by his school and non-school environment.

One or two other characteristics of elementary school guidance also need identification. The developmental approach to the establishment of guidance functions where both preventative and remedial features are evident is commonly supported. The cooperative involvement on an organized basis of administration, faculty, and special staff is another basic condition. Finally, it is suggested that although guidance focuses on a variety of pupil problems, a four-fold category of personal (self-understanding), social, academic, and career concepts may prove to be useful.

C. Personnel Responsible

Several professional groups including administrators, area resource personnel, and teachers have a distinct responsibility in the guidance area. A basic concept underlying this position is that if guidance as a type of educational intervention is to have a unified thrust, it must reach the pupil through a variety of contact points. Every teacher has a guidance role which complements her instructional role. Though they are distinct areas of action, these roles may often overlap.

The counseling service in the elementary school (at the moment) is not clearly identified with one professional person. The school counselor may share responsibility with the school social worker or the school psychologist. Titles, too, are not commonly used, and no one title has been accepted generally by those engaged in counseling (and guidance) in the elementary school.

The exact nature and role of the counselor in the elementary school has not been clarified to the mutual satisfaction of teachers, guidance workers, administrators, and other personnel specialists. Some research and considerable theorizing has been done, however, which points up a possible classification of duties. Broadly speaking, the elementary school counselor has three areas of responsibility: (1) counseling with students, (2) consultation with teachers, parents, and other school personnel, and (3) coordination or leadership in guidance functions of the total school.

III. The Counseling Function

A. Counseling Goals

The goals of the counseling process in the elementary school, while not easily circumscribed by particular areas of pupil concern, appear to focus on four types of problems: (1) self-understanding and awareness, (2) social acceptance and identification, (3) academic integration and success, and (4) career orientation and values. Process or outcome goals include both immediate and long-range objectives. The former stresses current client understandings and happiness while the latter emphasizes future growth and development in relation to personal objective resources.

B. The Helping Individual

More than technique or clear-cut methodology, successful elementary school counseling depends on the personal characteristics, value structure and professional skills of the counselor (or teacher). Probably the most important personal quality is that of openness to new experiences, acceptance of others, and awareness of the available perceptual field. To free others to learn, the helping person tends to be non-authoritarian and open to new experiences related to his own needs and defenses.

The professional skills of the elementary school counselor, while based on a sound comprehension of the school as a social system and the dynamics of individual behavior, must center upon a repertoire which permits an accurate assessment of pupil needs and characteristics and a range of assistance measures for bringing about suitable behavior changes. As related to the personality of the counselor, the ability to listen and identify meaningful pupil cues with affective features is one of the most important qualities. Responding in a manner which permits frank review of the pupil's action but clearly reveals acceptance of the child as a person complements the listening skill of the counselor.

C. The Counseling Process

The process of developing a helping relationship with an elementary school child rests upon several basic assumptions, accepts certain goals, and relies upon a variety of procedures. The objective of the helping person is to assist the child in the process of learning more adequate self-perceptions by helping him in the interpretation of his experiences so that his own intrinsic nature is given creative individual expression. The basic element is a personal relationship which, rather than depending on manipulation or objective behavior analysis and accountability, fosters an atmosphere of self-exploration and results in meaningful self-enhancing experiences related to attitudes, values, and beliefs.

The procedures accompanying an effective counseling exchange with an elementary school child center upon attempts to see what an experience means to the child in relation to his own self-perception. Based on the assumption that learning is a result of change in personal meaning, the chief approach must involve an atmosphere in which the child feels free not only to examine the significance of his own experiences, but is given the opportunity to choose new responses and thus reorganize his experiences, voluntarily. The entire process must focus on human involvement, based on a one-to-one intrinsic experience which is largely affective, internally derived, and maximally expressive for the child. Certainly, a teacher or counselor must be critically alert to his own psychological defenses as well as the extent of his willingness to let others be themselves if he hopes to establish a climate in which a child can feel accepted, understood, and free to explore life.

D. Possible Unique Features of Elementary School Counseling

Although both research and practice are necessary to confirm the distinctive value of particular procedures uniquely applicable to elementary school counseling, several such operational approaches can be tentatively suggested. A basic advantage often accruing to the elementary school counseling situation is the stimulus of an opportunity open to those fortunate elementary pupils who find themselves the center of a one-to-one encounter with a helping individual. Other more limiting differences, also distinguish elementary counseling efforts. Because of the subtleties of the communication process, greater reliance on non-verbal cues and counselor structure may be necessary. Too, the ambiguity of the relationship with variable tempo, effect, and content may require greater flexibility and sensitivity on the part of the counselor. Specific techniques, such as play materials or other media, may be useful as energy occupiers as the child verbalizes his concerns in a free expression situation. Initially, because of naivete of the counselor, more oblique or indirect overtures may be useful in opening conversational avenues. Finally, the assessment of outcomes, while more obvious in some instances, is likely to demand more developmental data and research efforts than cases where educational or vocational decisions furnish some evaluative evidence.

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CONFERENCE SUMMARY

Dr. Henry L. Isaksen

One of the small discussion groups indicated that the leader, whoever he may be, should be a change agent; he should be in a position to effect changes in order to improve the educational program. You don't want to waste a good counselor or psychologist on routine administrative tasks. The person who becomes a change agent frequently has the responsibility for all of these routine administrative tasks.

What qualifications should this person have? Frankly, I don't think that it matters whether he is a psychologist, a social worker, a counselor, or a speech therapist by training, as long as he has the total picture. I'm a little biased, but I think that a good counselor is more apt to have this than a psychologist, or a social worker, or a speech therapist, because of the nature of his training and background and, usually, because he has been a teacher. I don't think that a counselor should be required to have been a teacher before he becomes a counselor, but if we do require it of the counselors we should also require it of the psychologists, social workers, and speech therapists.

The question is with communication, of course. Dr. Cottingham touched on that; many of us have mentioned it. We need to communicate more effectively.

May I inject one point which I feel we need to consider. I believe we, as educators, are too defensive. We have been too anxious to present a good picture. We have been too anxious to convince the public that we are doing a good job. As a matter of fact, we're doing a poor job! We're still losing about one out of four as dropouts and we're losing another one out of four as "sit-ins" who are getting absolutely nothing out of their educational program. We're only batting about 500. Now, in baseball that's not bad, but in education where we are supposed to be educating 100%, it's pretty poor, and I think we'd better quit kidding ourselves and the public about how adequate our schools are.

The point was made that we are still tremendously understaffed in elementary schools. The amount of money that is wasted in our educational systems must be salvaged. The only way to save it, it to put more in. I think that economists in our society, the taxpayers included, would be able to understand that point if we weren't so careful to shield them from the real facts about how we are failing on so many fronts in our educational program.

Certainly, the emphasis should be on prevention; we should not make the mistakes in the elementary program that we made in the secondary program; and certainly every guidance worker should be aware of readiness. I was a little concerned that little attention has been given to the other side of the educational coin-program flexibility. If many of the students in our schools are poorly placed, if they are expected to do work beyond their maturity level, why not change the program instead of keeping the same rigid outmoded system that we now have of pushing the children back down the line. You know, if you push that to its ultimate conclusion, it has a domino effect. Take all the children in the sixth grade who aren't really ready for that grade and put them back in the fifth; there are some in the fifth grade who aren't quite ready for the fifth; and you push them back to the fourth, etc. The parents would never approve of this since ultimately, you would be returning the kindergarten children to their homes.

There is a basic error in not recognizing that the schools can adapt to the child as well as the child adapting to the school. I believe that repeating grades under our present system is damaging. The research cited supports that position.

Now, a few comments regarding Dr. Hill's presentation. I agree that we should take the incidental out of our present pupil personnel services programs. I like the statement that elementary counselors are called consultants, because counselors in secondary schools are really assistant principals. But I don't really think calling them consultants solves the problem. The solution is to get the secondary counselors to quit being administrators, and to recognize that there is a need for counselors as well as administrators at the secondary level. I believe the wide spread attention to the ASCA statement of the counselor's role is having an impact.

I was a little disturbed by Dr. Cottingham's note: "That if we had enough teachers and enough teacher aides, we wouldn't need any counselors." My answer to that is that teaching and counseling are not the same function. I like the idea of recognizing the differences and of organizing the educational program in such a way that we can implement the differences. Certainly the lack of structure gives us an opportunity to be imaginative and I hope we'll grasp that. My plea is that we recognize the counselor as more than just a "good guy", undifferentiated in duties from the teacher or principal. We as counselors are providing an essential service which is distinct from those services provided by the teacher and principal. That, to me, is the key to the success of our elementary school guidance programs.

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